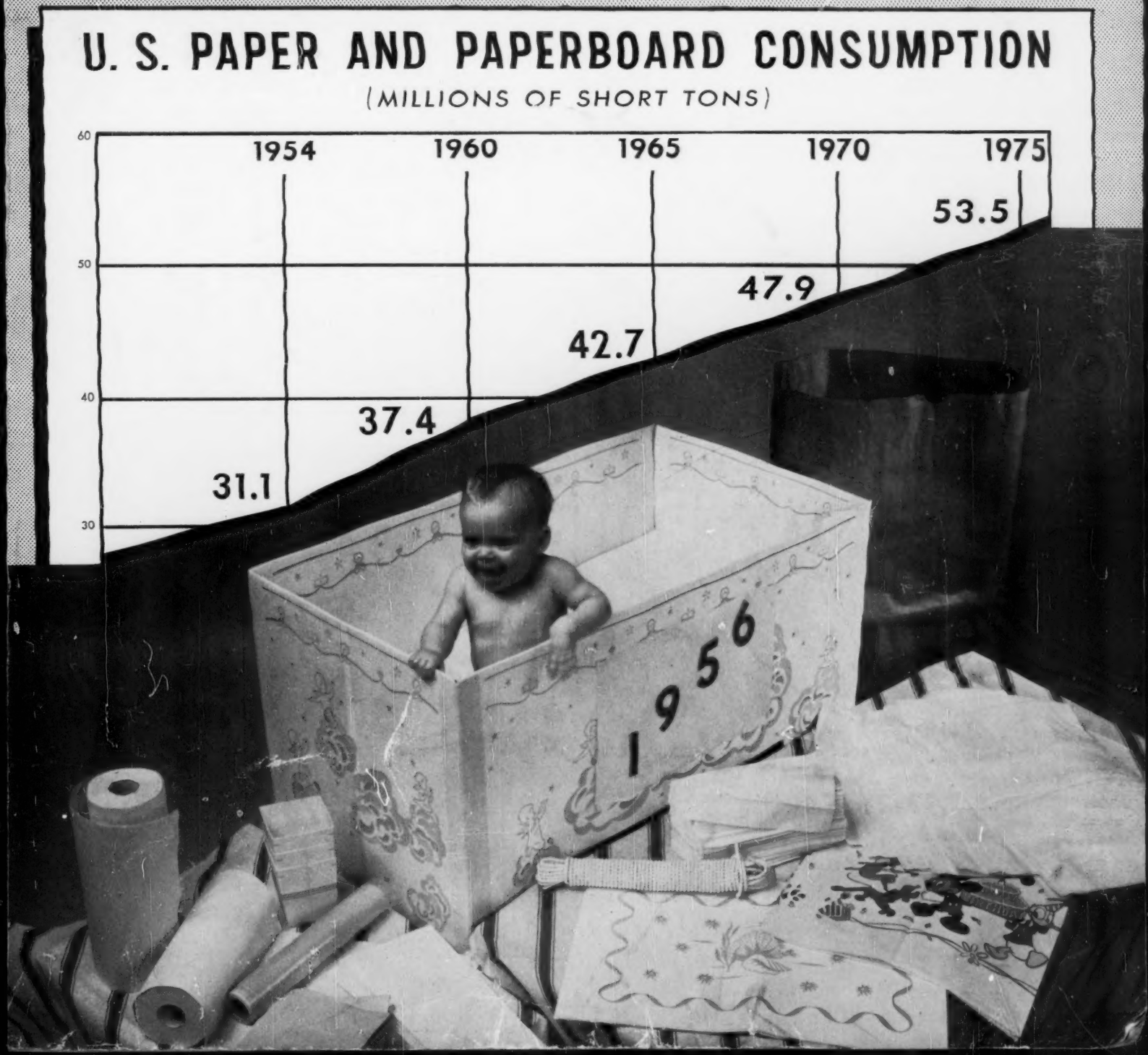
PULP & PAPER

JANUARY 1956
Our Thirtieth Year

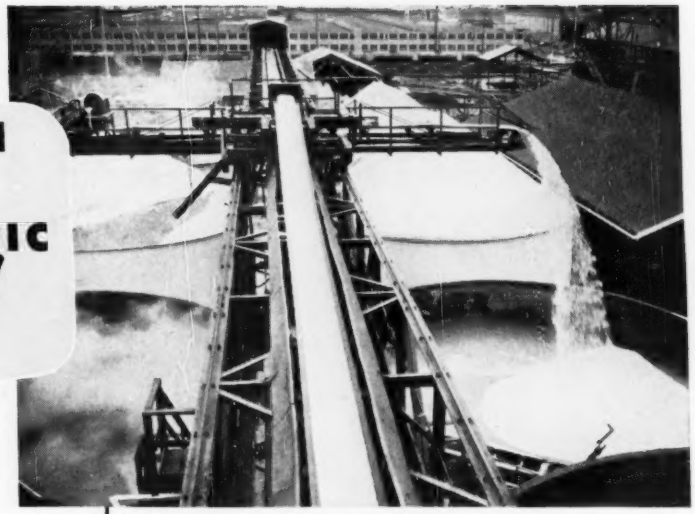
Paperboard Mills Face 1956 page 61

How to Win World Markets page 67

How Weyerhaeuser Ties in Semi-Chem with Kraft page 82



Umpty-thousand tons of HOOKER CAUSTIC *Coming up!*

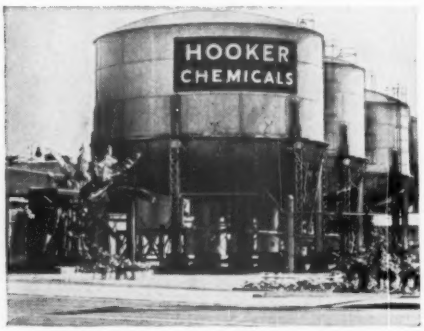


CONVEYORS feed salt to brine tanks for caustic soda and chlorine production in Hooker electrolytic cells.

We will produce more caustic soda this year than ever before in our history.

This would be meaningless, except that it expresses our belief in the future of the chemical industry—and our readiness to keep growing with it as one of your major suppliers of chemical raw materials and intermediates.

Today, more than ever, you can count on Hooker for dependable supplies of caustic soda, chlorine and many other industrial chemicals.



CAUSTIC SODA DISTRIBUTING STATION

5 Reasons for Specifying HOOKER Caustic

1 **Large-tonnage production**—The biggest in nearly 50 years—means dependability of supply for you.

2 **Quality caustic in the form to meet your needs** 50% and 73% liquid; flake; solid. Drums, tank cars, barges. An impressive background of experience in serving large users of caustic.

3 **Technical service**—Willing, competent help in safe handling and use of caustic in your process. Experience gained from serving 30 industries is at your disposal.

4 **Fast, dependable deliveries**—More facilities than ever before for getting caustic to you, on schedule.

5 **If you use caustic in l/c/l quantities,** you can now purchase caustic from a Hooker plant, warehouse or jobber near you. Write us for name and address of your nearest Hooker jobber.

FOR ANALYSES, PRICES, DELIVERY INFORMATION, write Hooker Electrochemical Company, 2 Union Street, Niagara Falls, N. Y.—or phone your nearest Hooker sales office.

From the Salt of the Earth

HOOKER ELECTROCHEMICAL COMPANY

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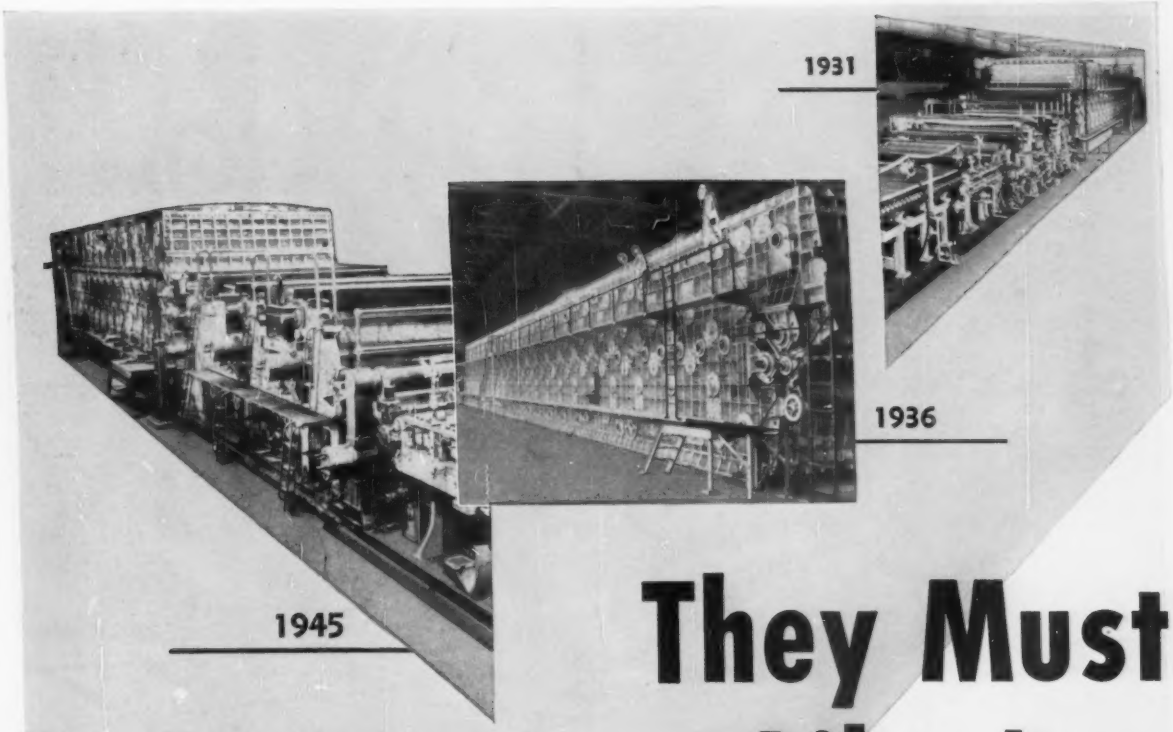
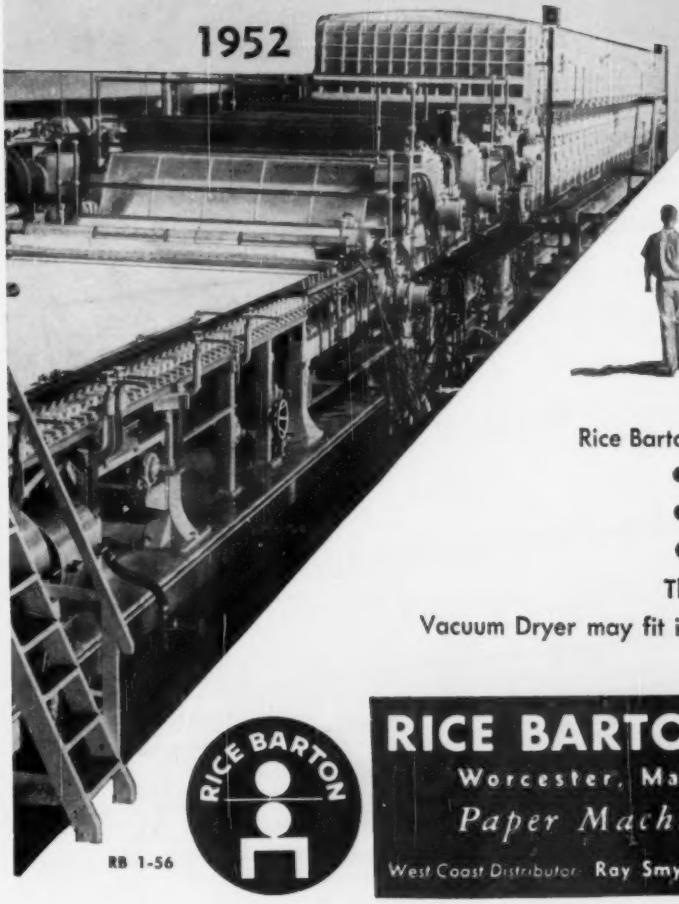
2-1934



They Must Like 'em



#5 On Order

Weyerhauser Timber Company
have ordered their fifth
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- Lower steam consumption
- Less man hours per ton of pulp

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Worcester, Massachusetts
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West Coast Distributor Ray Smythe • • 501 Park Building • Portland, Oregon

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PULP & PAPER

VOLUME 30 NUMBER 1

January 1956

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EVERYTHING PAPER BUT THE BABY. Our cover picture shows one of an estimated 3,000,000 new American consumers in 1956 who will help keep U.S. consumption of paper and paperboard products climbing to new heights. Paperboard crib and food cartons, wet-strength paper bag and clothes line, disposable paper diapers and diaper liners, familiar tissues, napkins, table cloths—these paper products—and the baby—were supplied by American Cyanamid Co.'s Paper Chemicals Dept. in cooperation with PULP & PAPER's own idea for a New Year cover for 1956. Chart based on Stanford Research Institute forecast.

PULP & PAPER

EDITORIAL PAGE

Over the Shoulder, as We Enter Our 30th Year

This is the first issue of PULP & PAPER's 30th year.

In 1955, all offices and departments of PULP & PAPER combined talents, enthusiasm and down-right hard work to smash all previous publication records and make it the greatest year ever for this magazine, which now circulates in over 40 nations or territories around the world.

The 12 monthly issues and PULP & PAPER'S WORLD REVIEW NUMBER totalled almost 2,000 pages last year! Actually, the staff produced a grand total of 1,994 pages. This compares with 1,796 pages in 1954, 1,476 in 1950, 916 in 1945 (there was one less issue in '45; REVIEW NUMBER was one of the 12). In 1927, PULP & PAPER's first year, there were 11 issues totaling 824 pages.

PULP & PAPER's growth has been a steady upward march, more than doubling in size since the war, a fatter volume each successive postwar year. Readers unfamiliar with the publishing business, may be surprised to know that every year since the war has NOT been a better year for many magazines, including a lot with famous names. So PULP & PAPER belongs in pretty select company.

Next month is the 10th anniversary of the opening of a Southern office by PULP & PAPER. Just a few months ago, PULP & PAPER's offices in the South became two instead of one. William F. Diehl, Jr., Atlanta, became Southern editor. Bill Krebs, a veteran writer over 30 years in Southern timber industries, and an editor for PULP & PAPER for the past 10 years, becomes—with this issue—district manager in New Orleans. The entire PULP & PAPER staff salutes Bill Krebs for a grand job well done and knows he will continue to serve the same loyal way on the special duties and assignments he now carries on with.

"Maverick" Duplessis and American Press

American newspapers, usually violent foes of economic restrictions, totalitarianism and dictatorial actions, gave wide publicity to Premier Duplessis' threat to halt a newsprint price increase in Quebec. No newspaper raised a doubt as to the democratic principles involved, or attempted to explain to United States readers that M. Duplessis is a radical maverick, who can be expected to stray on questions of public policy in Canada.

In Canada, where they know M. Duplessis, there were only a few raised eyebrows. There might have been more if they had seen the play the American papers gave to him.

The fact that Quebec happens to be Canada's No. 1 newsprint producing province, with newsprint the area's major industry, made no difference to M. Duplessis, who works on the theory that there are more votes among the habitants and other lesser fry than in the ivory citadels of Montreal, and that they and Quebec's newspapers are "co-owners of the forest."

But if the newsprint companies sold newsprint at one price in Quebec and in the rest of Canada at a higher figure they might be accused of discriminatory sales, contrary to the Canadian criminal code. Ottawa would then feel compelled to intervene.

The feeling in Quebec is that M. Duplessis isn't likely to carry his threats into action, although he might seek to pressure the companies through provincial licensing of timber limits. Whatever he does, it will probably be the unexpected. Like Jimmy in the parade, everyone is always out of step except him.

THE EDITOR LOOKS AT HIS MAIL

Addressed to:
1791 Howard St., Chicago 26

How This Industry Absorbs Many New Costs

I have read your editorial concerning the attitude of newspaper publishers toward the recent increase in prices of newsprint (Dec. 1955 issue). Your position is very well taken and timely, and I congratulate you on showing them in the ridiculous light they so justly deserve.

There is another aspect of this industry's pricing situation which bears investigation and discussion. According to your editorial, the recent price increase is the first since 1952. I believe that industry prices generally have not been increased in most grades until recently for a similarly long or longer period.

In the meantime, as you pointed out, all our raw materials, labor, services, building materials, and almost everything else that goes into pulp and paper has increased at least once or twice a year during the intervening years. Whenever steel, automobiles, fuels, or most other industries have an increase in costs, they immediately pass it on to the consumer.

Frankly, we in the paper business should take pride in not having followed this practice. But we can go only so far with absorbing costs each year by increased productivity and efficiency. It is not economical to hold the line beyond a certain point.

I feel that we are somewhat responsible for the reaction of our customers to price increases. If we had engaged in the practice of annual price increases to our consumers as have other industries, we would receive about as much reaction today as these other industries receive from their customers.

I am not advocating that we pass on all increased costs to users of our products, but I do believe that the industry as a whole will benefit if we give dignified, factual publicity to our relative position insofar as price increases are concerned. The proven ability of the paper industry to increase its productivity by leaps and bounds, which increases have allowed us to absorb so much of the increased costs, is something that should be told to all Americans as proof of what can be done and as proof of the manner in which the paper industry conducts its affairs. The credit for this should go to all the groups of people engaged in this industry and to me the public relations potential of this particular subject is tremendous. This is a tremendous story which has never been told and which would do a lot to dissipate the unjust reactions to which our industry is subjected.

H. W. ELLERSON, JR.
General Superintendent, Halifax Paper Co., Inc.

Hats Off to John Strange Mill

Regarding your story illustrating the new power plant at the John Strange Paper Co., it might interest your readers to know that this plant has received national recognition through winning one of "Power" plant modernization awards for 1955.

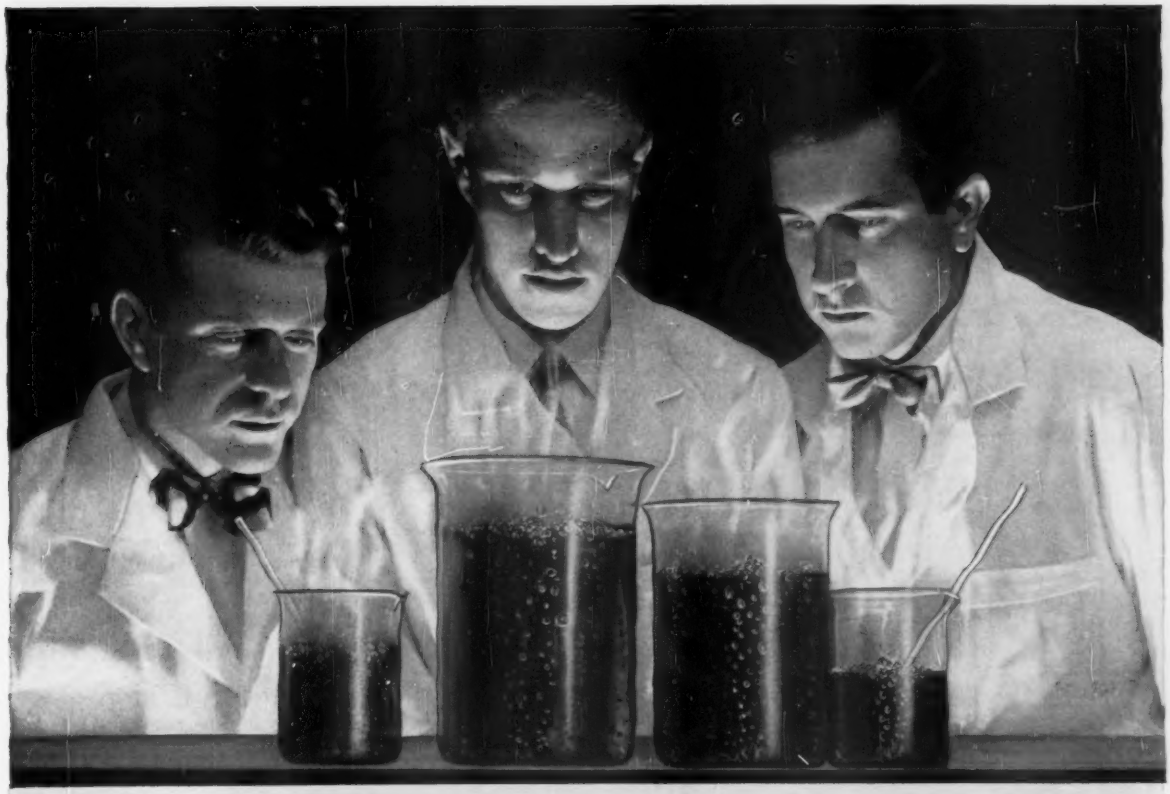
T. C. SCHUYLER
Asst. Sales Manager, Union Iron Works

Serves Industry Well

Your October issue with the story of the Pulp Consumers tour is fascinating.

The work that is being done by your magazine and by various company releases is at last giving the industry a name of respect in the country.

DWIGHT L. STOCKER
President, The KVP Co.



Where too many "cooks" DON'T spoil the broth!

Good "cooking" makes for good cellulose. Here at Buckeye, giant 60-ton digesters give our raw materials just as fine a "cook" as man can devise!

But . . . while each "cook" is in progress, samples are continuously being checked and tested in our laboratories. The result? Exacting down-the-line production control to guarantee you a Buckeye product *precisely* suited to your need.

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NOTES FROM NORTHEAST

Eastern Rep. for Black Clawson; Oxford Personnel Changes

EMERSON N. GLAUNER, SR., formerly of Downingtown Mfg. Co., has joined Black-Clawson as eastern sales representative at new B-C Eastern sales office, 27 East Lancaster Ave., Downingtown, Pa. L. P. ELLISON, sales engineer representing Shartle Div. in East, joins Mr. Glauner in servicing Eastern accounts. . . . HUGH J. CHISHOLM, president, Oxford Paper Co., recently received the Industrial Achievement Award of the Maine State Chamber of Commerce on behalf of his company. . . . WARREN E. BENNETT has been named controller of Champion-International Co., heading up accounting under WILLIAM C. MACADAM, assistant treasurer. He lives at 66 Marlboro St., Newburyport, with wife and three children. . . . HOWARD A. BLYTH is now assistant to the general manager of organic chemicals div., American Cyanamid Co., says V. E. ATKINS, division general manager. He joined Cyanamid in 1943 as a group leader at Stamford Laboratories. . . . ROBERT A. DEMUND, JR., is new supt. of Oxford Paper Co.'s machine coated color plants, according to H. PAUL PETZOLD, mill manager. He has a bs degree in chemistry from the U. of Vermont. . . . McClusky Wire Co., Inc., of New Haven, Conn., announces appointment of PAUL E. SARGENT as sales representative in New York, New Jersey, Pennsylvania, Ohio and lower Michigan. He replaces ROBERT W. HOWARD who is now representing Lindsay Wire Weaving Co. . . . RICHARD M. WALDENMYER, from the Rumford, Me., mill is being transferred to New York office of Oxford Paper Co. as assistant in purchasing to J. EVERETT SHEA, Manager, Purchasing. He replaces E. LEE MULLER who recently resigned. ELLIOTT K. HALE, JR., accountant at the Oxford mill, will become assistant to R. E. WOODSUM in the Mill Purchasing Dept. Mr. Waldenmyer was born in Montpelier, O., and studied engineering at the University of Michigan. . . . JOHN A. FORBES has been appointed to sales staff of John W. Bolton & Sons, Inc. to represent the company and its Emerson Division in New York State and Eastern Canada. Mr. Forbes succeeds William C. Ferguson, who is now handling special customer service on stock preparation equipment. Mr. Forbes is also technical advisor to Pulp & Paper Mill Accessories, Ltd., Bolton-Emerson sales and manufacturing representatives in Eastern Canada. Mr. Forbes joined Bolton-Emerson in Sept. 1955 after 19 years with Downingtown Mfg. Co., interrupted by two years in the armed forces. . . . ARTHUR B. MCCORMICK, JR. has joined the pulp sales staff of Rayonier, Inc. according to M. A. Brown, general sales manager. Formerly with the Kendall Mills, he will specialize in domestic paper pulp sales, reporting to WALDO H. BACKER, manager of domestic sales. Mr. McCormick is a graduate of Harvard U., is married, has one child and will live in New York. STANLEY F. CLINTSMAN was promoted to night superintendent at St. Regis Paper Co.'s Herrings, N. Y. plant. . . . THOMAS H. LOGAN, JR. has been named sales manager of The Eaton-Dikeman Co., Mt. Holly Springs, Pa. . . . HERMAN C. WEBER, assistant purchasing agent, Hammermill Paper Co., is now the "Professor" to associates since he assumed professorship of a class on the principles of purchasing at Gannon College. Among 45 students are three Hammermill purchasing employes: HARRY WEINHEIMER, ROGER STURTEVANT and ELMER MILLER. . . . SAM COSTANZA, recent grad of Syracuse U., has joined Federal Paper Board Co. as chemist at Bogota, N. J. plant. . . . FRANK EATON is new regional rep for Solka-Floc and Solka pulps in the New York area for Brown Co. He joined Brown in 1948 in their market research. . . . CHARLES H. (BERT) KENT, retired resident manager, Hercules Powder Co., Holyoke, Mass., was recently elected president of the Holyoke Chamber of Commerce. EDWARD C. REID, president, American Writing Paper Corp., was elected a director of new C. of C. board. . . . THOMAS S. BOERKE, graduate in engineering, U. of Maine, has joined sales engineering, pulp and paper div., Improved Machinery Inc. He and wife Mary, and two children, live at 12 Storybrook Rd., Cape Elizabeth, Me. Tom will cover New England and has 5 years of pulp and paper engineering experience as well as 5 years of industrial sales experience to this industry. . . . JOSEPH H. MURPHY is now special production representative of the container division of Robert Gair Co., Inc. according to WILLIAM T. May, JR., vice president in charge of container operations. He will report to J. P. GREIVELDINGER, general production manager and will headquarter in N. Y. . . . ALEXANDER R. ANDREW, who recently returned from Kodak Brasiliera Ltd., is now assistant supt. of paper sensitizing div. at Kodak Park. . . . MEYER D'ATTILIO, former machine tender of No. 3 Mill has been promoted to assistant to general supt., Downingtown Paper Co. WEBSTER J. HILTON, also a machine tender, has been upped to supt., No. 4 mill. HARRY FIEBERTS, formerly with Lukens Steel Co. Machinery Div., consulting on paper mill machinery, has joined Downingtown as project engineer. . . . G. ARNOLD ROBERTS is now supervisor, engineering dept., Portland Copper and Tank Works, South Portland, Me. He will supervise engineering dept. activities in pulp and paper industry. . . . DONALD G. SHOOK has been appointed deputy director of the Forest Products Div., Business and Defense Service Administration of the U.S. Dept. of Commerce. . . . While attending Penjerdel Fall Meeting recently, HOWARD FERGUSON, supt., Curtis Paper Co., won a steam iron. . . . ALVIN R. WYSOCKI, industrial designer, and MERTON R. SUMMER, JR., design engineer, have joined Brown Co.'s. engineering dept. SHERMAN SPEARS of Brown's Cascade machine shop has been upped to foreman. HAROLD J. BLAKNEY, supt. of plant maintenance, pulp and paper divisions, has been promoted to manager of maintenance. DR. LEO KRUGER, of Brown's research dept., was recently elected president of the Brown Co. Chess Club. . . . PAT PALMACCIO is now corrugator supervisor at Gibraltar Corrugated Paper Co's. box plant. TOM MANOGUE is now paper mill chemist at Gibraltar and CLYDE BENSON, formerly working with Gibraltar as private consultant, has joined up as technical director. TOM IANNUCCI, engineer, has been upped to box plant engineer. . . . HARRY C. BALLARD, plant engineer, Carthage Paper Makers, Inc. and Climax

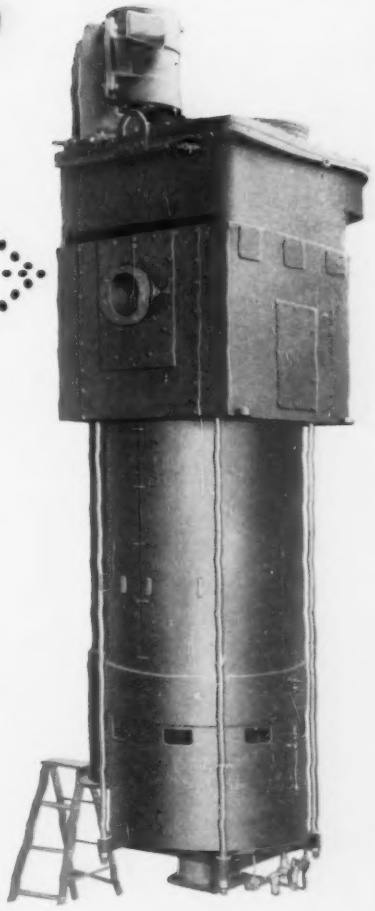
Continued on page 10

SURPRISE! While gathered for what was purportedly to be a group photo of Annual Sales Meeting, JACK CRYAN, (right), Sales Manager, Fraser Paper, Ltd., was genuinely surprised as JIM CONLEY, General Sales Manager, presented him with engraved gold watch in recognition of 25 years with Fraser. JACK BARRY, Sales Promotion Director; and BOB O'NEILL, Sales, are looking on.

PULP CAN BE *MORE* PROFITABLE!

Eliminate costly WET LAP shipping!

NEW JACKSON & CHURCH SYSTEM
OF "CRUMB TRANSPORT"
CUTS LABOR AND MAINTENANCE COSTS...
SAVES TIME AND MONEY!



J-C Continuous Pulp Press

For the custom mill or the integrated mill shipping "excess" pulp, there's big news in this new J-C system.

No longer is it necessary to ship wet laps or sheeted pulp. Now through the use of the J-C Continuous Press, pulp to be shipped is de-watered, bringing consistency up to 40%, and the resulting "crumbs" may be easily blown into cars or trucks for shipping, completely eliminating "wet lap" handling. The pulp "crumbs" are just as easily handled at the receiving end.

A minimum of labor is involved in either pressing or handling. Capital expense is lower than with any other method. J-C Pulp Press installations are available in capacities of 25 ton to 300 ton units.

Write today for additional information about this new Jackson & Church system of "crumb" transport . . . now in successful commercial operation in custom and integrated mills.

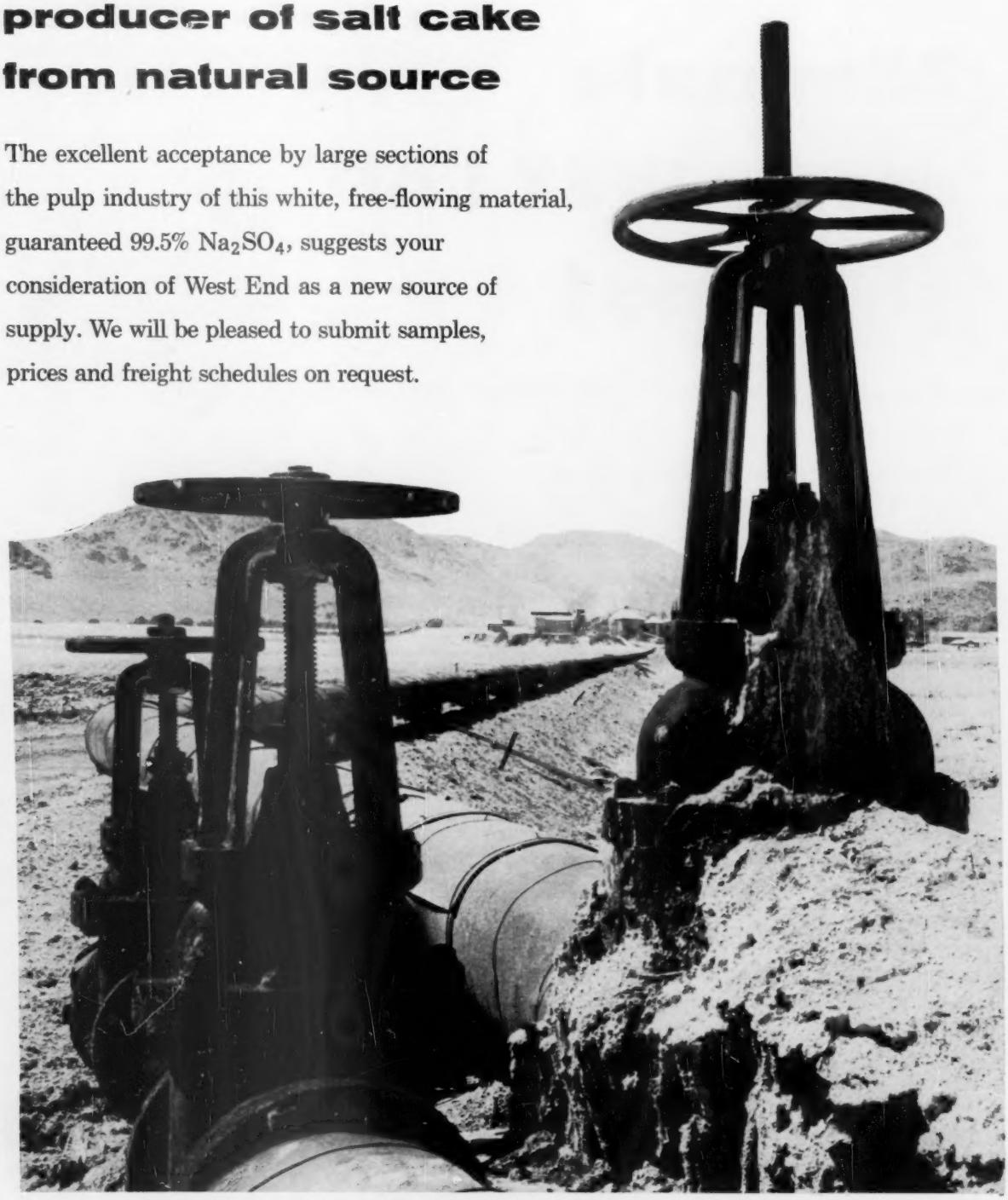
J-C

JACKSON & CHURCH CO. SAGINAW, MICHIGAN

Work well done since eighty-one

West End . . . new producer of salt cake from natural source

The excellent acceptance by large sections of the pulp industry of this white, free-flowing material, guaranteed 99.5% Na_2SO_4, suggests your consideration of West End as a new source of supply. We will be pleased to submit samples, prices and freight schedules on request.

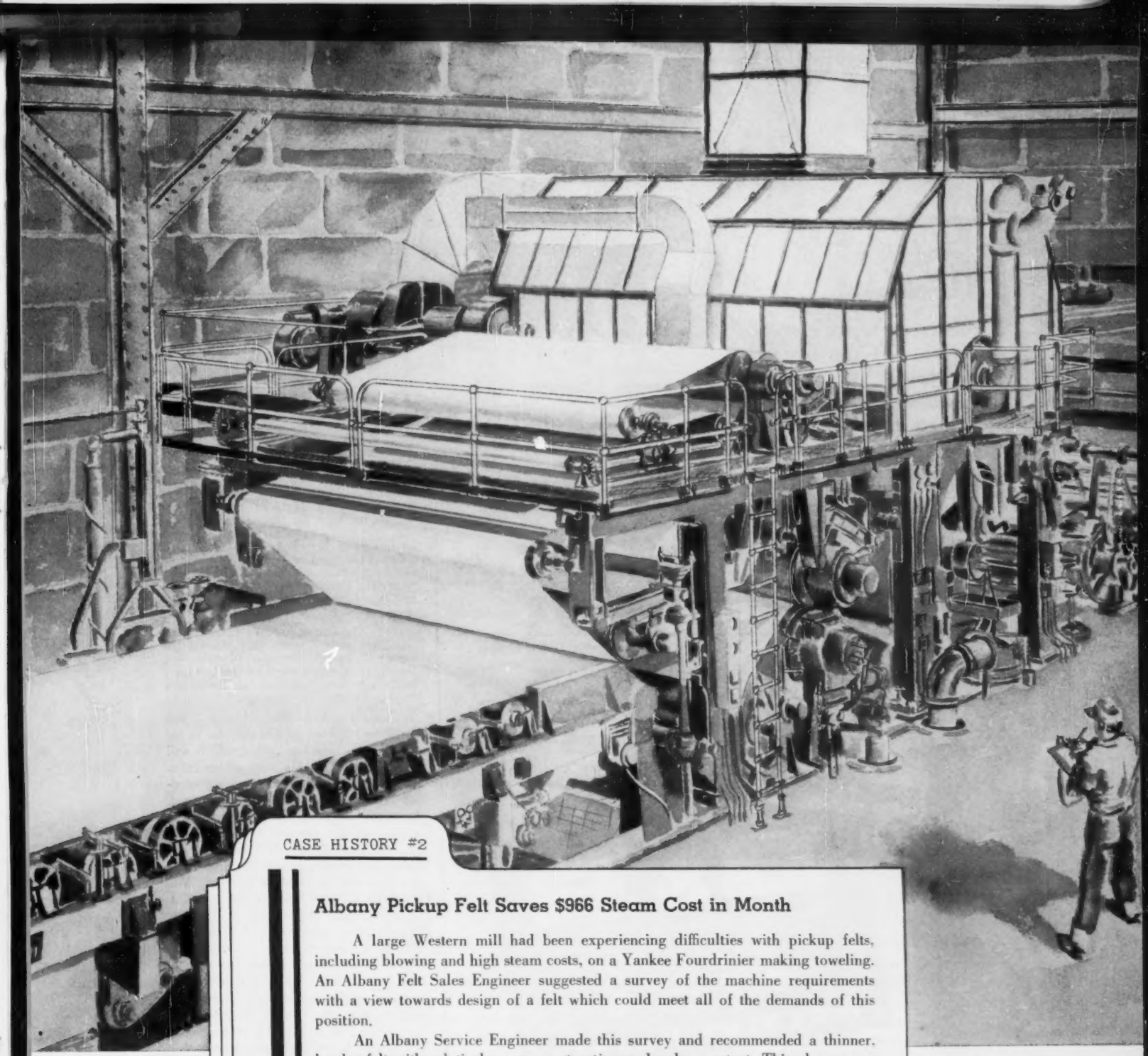


WEST END

West End Chemical Company

SODA ASH • BORAX • SODIUM SULFATE • SALT CAKE • HYDRATED LIME

EXECUTIVE OFFICES, 1956 WEBSTER, OAKLAND 12, CALIFORNIA • PLANT, WESTEND, CALIFORNIA



CASE HISTORY #2

Albany Pickup Felt Saves $966 Steam Cost in Month

A large Western mill had been experiencing difficulties with pickup felts, including blowing and high steam costs, on a Yankee Fourdrinier making toweling. An Albany Felt Sales Engineer suggested a survey of the machine requirements with a view towards design of a felt which could meet all of the demands of this position.

An Albany Service Engineer made this survey and recommended a thinner, harder felt with relatively open construction and nylon content. This change was accomplished, and a comparative study of the old and new styles was made during a three month period.

RESULTS: During this period, the Albany felts required nearly 2000 pounds *less* of steam per hour than the felts previously used, affecting an average savings in steam cost of $966 per month. In addition, the mill superintendent reported that the Albany felts caused no trouble from blowing; gave better pickup, better sheet formation, and better production.

For improved felt performance on your machines, call in your Albany Felt Sales Engineer. His analysis of your problems, together with the efforts of the industry's top team of Service Engineers, Designers, Research and Laboratory Specialists, will bring you the famous "blue line" felts you need to help produce *more saleable tons per day!*

ALBANY FELT COMPANY

"THE WORLD'S LARGEST MANUFACTURER OF PAPER MACHINE FELTS"

MAIN OFFICE and PLANT, ALBANY 1, N. Y. Other plants: Hoosick Falls, N. Y., No. Monmouth, Me., Cowansville, Quebec

NORTHEAST NOTES, Continued

Mfg. Co., and **F. CLIFFORD HEATH,** credit manager, Sealright Co., Inc., Fulton, N. Y., are district governors of Rotary International for 1955-1956. . . . **HAROLD A. HAM** has been named to new post of general manager in charge of manufacturing at the Flex-Vac division of Standard Packaging Corp. **H. T. HOLBROOK,** formerly general manager, becomes vice president in charge of the company's expansion.

SOUTHERN SIDELIGHTS

Gadget Peels Peanuts; Manager at Franklin Plant

JACK FORRER, Camp Mfg., Franklin, Va., engineer who has been partially responsible for developing interesting machinery innovations there, has a "Rube Goldberg" hobby on the side he is attempting to invent a gadget which will peel the hard brown skin off peanuts. The latest effort is frantic-looking combination of springs, floor mats, sandpaper, flywheels—and imagination. Jack claims it works—and the peanuts taste delicious. . . . **WILBUR E. BECKER** has been appointed plant manager of Hercules Powder Co.'s tall oil plant at Franklin, Va. **DENNIS L. MOLNAR** is the assistant plant manager, **WINFORD J. JANES, JR.,** is plant engineer and **JOHN B. MONIZ** s chiem chemist. . . . Kimberly Clark's Memphis mill is boasting several new faces: **PHIL AKRIDGE,** chemical engineer, graduate of Memphis State, **J. B. CODY,** engineer, Mississippi State College alum; **JOE EUBANKS,** junior methods analyst in industrial engineering department, a grad of University of Arkansas; **BILL GREEN,** whose background and job read the same as Joe Eubank's and **JOE MALLOY,** senior methods analyst and graduate of University of Alabama. . . . **OLIN P. LEE** has been appointed southern credit manager for Robert Gair Co., Inc., headquarters Atlanta. . . . Southerners were well represented at recent seminar refresher course in forest management at Yale University. List included **S. A. BOUTWELL,** chief forester of Gair Woodlands; **DAVE CAMPBELL,** division forester of IP's Southern Kraft Division; **BILL COLVILLE, JR.,** forest economist for St. Regis' Jacksonville operation; **ERNIE DAVIS,** operating manager of Rayonier's Southeast Timber Division; **P. R. ENTZMINGER,** land management and assistant manager of

Continued on page 14

In News in the South

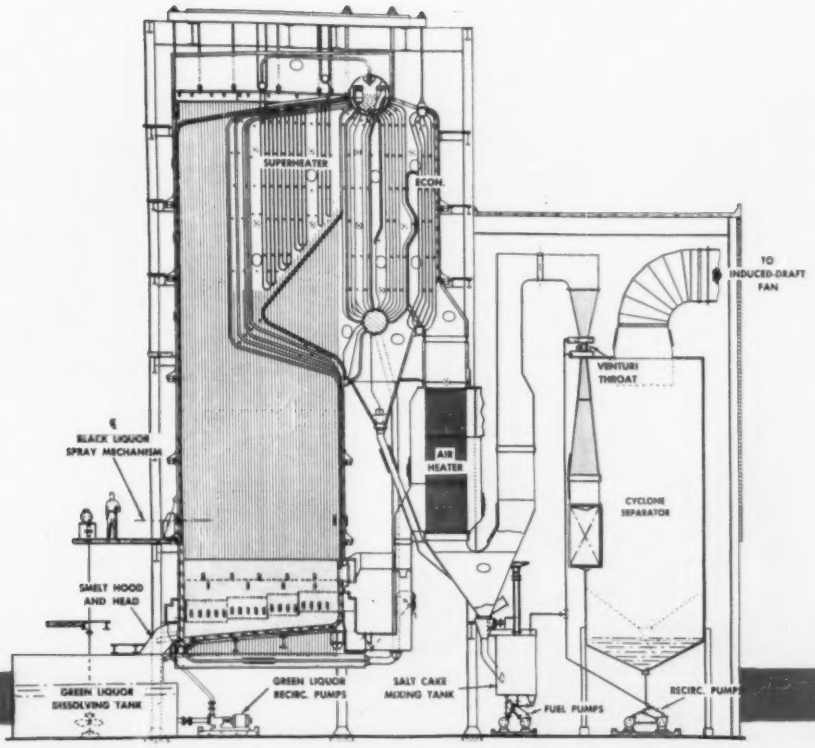
SAMUEL E. CROCKER JR. (left) has been appointed Mgr. of the Southern Region for John W. Bolton & Sons, Inc., and its Emerson Mfg. Division, with headquarters in Pensacola, Fla. Mr. Crocker returned recently from a trip to Peru for Emerson stock refining installations. He formerly lived in Florida and has many friends in that area.

BOB FLICK (right) new Southeastern TAPPI Treasurer, who takes ROY HOMANS' place while Roy attends Institute of Paper Chemistry in Appleton, Wis. Last year Bob attended the Institute. Both men are engineers at Brunswick Pulp & Paper.

United... **for greater service to the PAPER INDUSTRY**

After more than fifty years of successful manufacturing, Bailey & Blendinger joins forces with Lodding for greater service to the paper industry. B & B Knives, distinguished for endurance, and Lodding Doctors and Blades whose quality is reflected in rolls from Coast to Coast, are united for greater service to the paper industry.

B & B DIVISION
LODDING ENGINEERING CORP.
WORCESTER • MASSACHUSETTS



Venturi Evaporator-Scrubber

(Contact Liquor Evaporator) (Fume Collector)

Installed with B&W Recovery Unit at THILCO P&P COMPANY PRODUCTS means Improved Economy

The Babcock & Wilcox Company black-liquor recovery system illustrated above has completed two years of continuous trouble-free operation at THILMANY.

An outstanding feature of this installation is the B&W Venturi Evaporator-Scrubber, which combines in one piece of equipment both the concentration of black-liquor and collection of salt cake fume. The two-year operating period has proved the Venturi Evaporator-Scrubber to be completely reliable and highly efficient.

Two recovery units equipped with Venturi Evaporator-Scrubber are now in service. Eight additional units ranging in capacity from 117 to 360 pulp tons are currently on order.

The Venturi Evaporator-Scrubber is an important addition to B&W's equipment for black-liquor recovery. B&W can select exactly the right combination for your mill, as in the case of Thilmany Pulp and Paper Company.

Advantages of the B&W Venturi Evaporator-Scrubber unit include:

- *Simplified Operation*
- Low First Cost
- *Increases overall Thermal Efficiency*
- Efficient use of operating force
- *Reduces Maintenance Requirements*
- Continuous, High, Fume Collection Efficiency
- *Minimum space requirement*
- Reduces multiple effect evaporator load

BABCOCK & WILCOX

BOILER DIVISION

P-787

Shovel-loading train of gondolas.

Crude Sulphur

for Industrial Use

from the properties of

Texas Gulf Sulphur Co.

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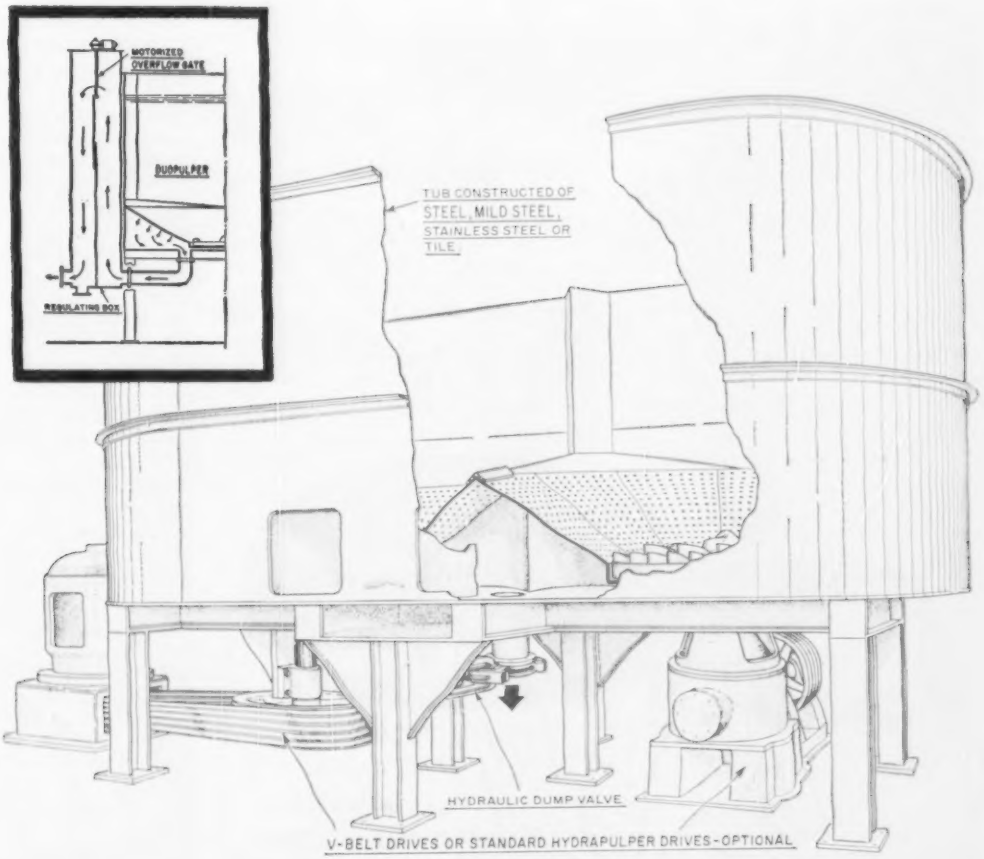
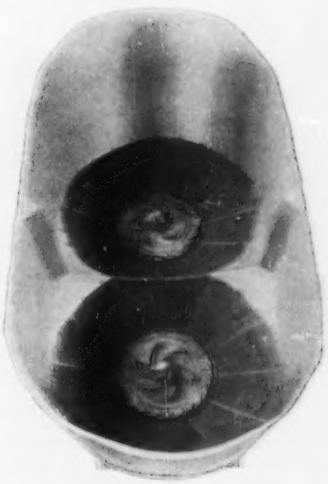
Producing Units

- **NEWGULF, TEXAS**
- **MOSS BLUFF, TEXAS**
- **SPINDLETOP, TEXAS**
- **WORLAND, WYOMING**


MOTORIZED OVERFLOW GATE
DUOPULPER
REGULATING BOX
TUB CONSTRUCTED OF STEEL, MILD STEEL, STAINLESS STEEL OR TILE
HYDRAULIC DUMP VALVE
V-BELT DRIVES OR STANDARD HYDRAPULPER DRIVES-OPTIONAL



NEW CONCEPT IN BROKE PULPING

...Shartle *DUOPULPER*

Designed to take full sheet width broke right off the machine or broke conveyors.

Two Hydrapulper® rotors in one low oblong tub. Generous extraction plates around outer periphery of each rotor for high capacity.

Requires very little head room . . . will fit under most machines. Equipped with regulating box with motorized control gate for automatic operation.

Available in several sizes.
Write or call Shartle Division for more information.

The BLACK-CLAWSON Company

SHARTLE DIVISION • MIDDLETOWN, OHIO

STRICTLY PERSONAL

SOUTHERN SIDELIGHTS, continued

Container Corp.'s Fernandina Beach Pulpwood Dept.; **BILL LIGHTSEY,** forest engineer of St. Regis at Jax; **JIM SMITH,** district forester of Hollingsworth & Whitney Div. of Scott Paper Co. at Mobile. . . . **JOHN TRACY** is new tour foreman at Rayonier's Fernandina plant and **BOB SWENSON** moves up to position of assistant finishing room supervisor. . . . *New face at Fernandina, chemist* **HENRY COLEMAN,** who hails from *Cocoa, Fla.,* and is an Auburn "War Eagle" by degree. . . . **HAROLD WARD,** *operating electrician at IP's Natchez Mill,* one of 12 people tieing for fourth place in the recent *"Ten Basic Rules of Safety"* contest sponsored by "International Supervisor", National Safety Council *monthly* magazine. Mr. Ward won over several thousand entrants from the U. S., Canada, Central America, Japan and Brazil. . . .

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AND SPECIALTY
CORES
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CARRIERS FOR—
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• PARCHMENTS • CELLOPHANE
• CASH REGISTER AND
ADDING MACHINE PAPER
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with or without BERMICO Metal Ends
Sonoco DURO Paper Mill Cores, with Bermico Metal Ends, combine super-strength, long service and low cost. A special scuff-resistant paper is used for the outside surface. Available with metal ends in sizes 3" to 6" I.D., in any length. Also available is the economical RHINO non-returnable core in standard and special sizes.
SPECIALTY CORES from ¼" O.D. and up, in lengths from ½" to 24' or longer with smooth or rough surfaces. Furnished in solid colored stock, plain or with special inside and outside wrap.
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FREE paper mill core brochure sent upon request!
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LONGVIEW, TEXAS • PHILADELPHIA, PA. • LOS ANGELES, CAL. • GRANBY, QUEBEC
BRANTFORD, ONT. • MEXICO, D.F.
DEPENDABLE SOURCE OF SUPPLY

JIM HENDERSON, *plant manager of* Sonoco's new branch plant at Longview, Texas, is now a full-fledged longhorn since Gov. Allen Shivers issued a proclamation granting him "Honorary Texas citizenship"—and that ain't all, pod'ner, he also got a ten-gallon hat Stetson to go *with it. What, no oil wells???* . . . **H. J. JONES** has been appointed corrugating *service technician in the Southeast* for Stein, Hall & Co., operating out of Atlanta, Ga. He was *one of Stein, Hall* engineers who pioneered the popular dual viscosity paste system designed for higher speed production in corrugating. . . . **LAURENCE S. ROCKEFELLER,** president of Rockefeller Brothers, Inc., investment and research organization, has been *elected a director of Olin Mathieson Corp.* West Virginia's Charleston, S. C., Mill *went international last month when they* played host to 15 industrial accident prevention experts from *Western Europe* sponsored by the International Cooperation Administration and the European Productivity Agency of the European Economic Organization (there's a mouthful!). Group was greeted by Mill Manager **L. F. THOMPSON.** . . . **JOHN McDERMOTT's** *duties as supervisor of all* St. Regis paper mills, gives him paper*making responsibilities at 10 mills in* seven widely scattered states. John still resides in "Jax," *devoting a lot of time* to the new machine which starts up there in early 1957. Pensacola, Fla., Tacoma, Wash., Sartell, Minn., Kalamazoo, Mich., Bucksport, Me., East Pepperell, Mass., Deferiet, Herrings and Carthage, N. Y., are "his" other mills. . . .

McCourt is Promoted

JAMES E. MCCOURT, chemical engineering graduate of University of Wisconsin, with Crown Zellerbach's technical department at Camas, Wash., since 1950, has been named Assistant Technical Supervisor of that mill, often referred to as the largest specialty mill in the world.

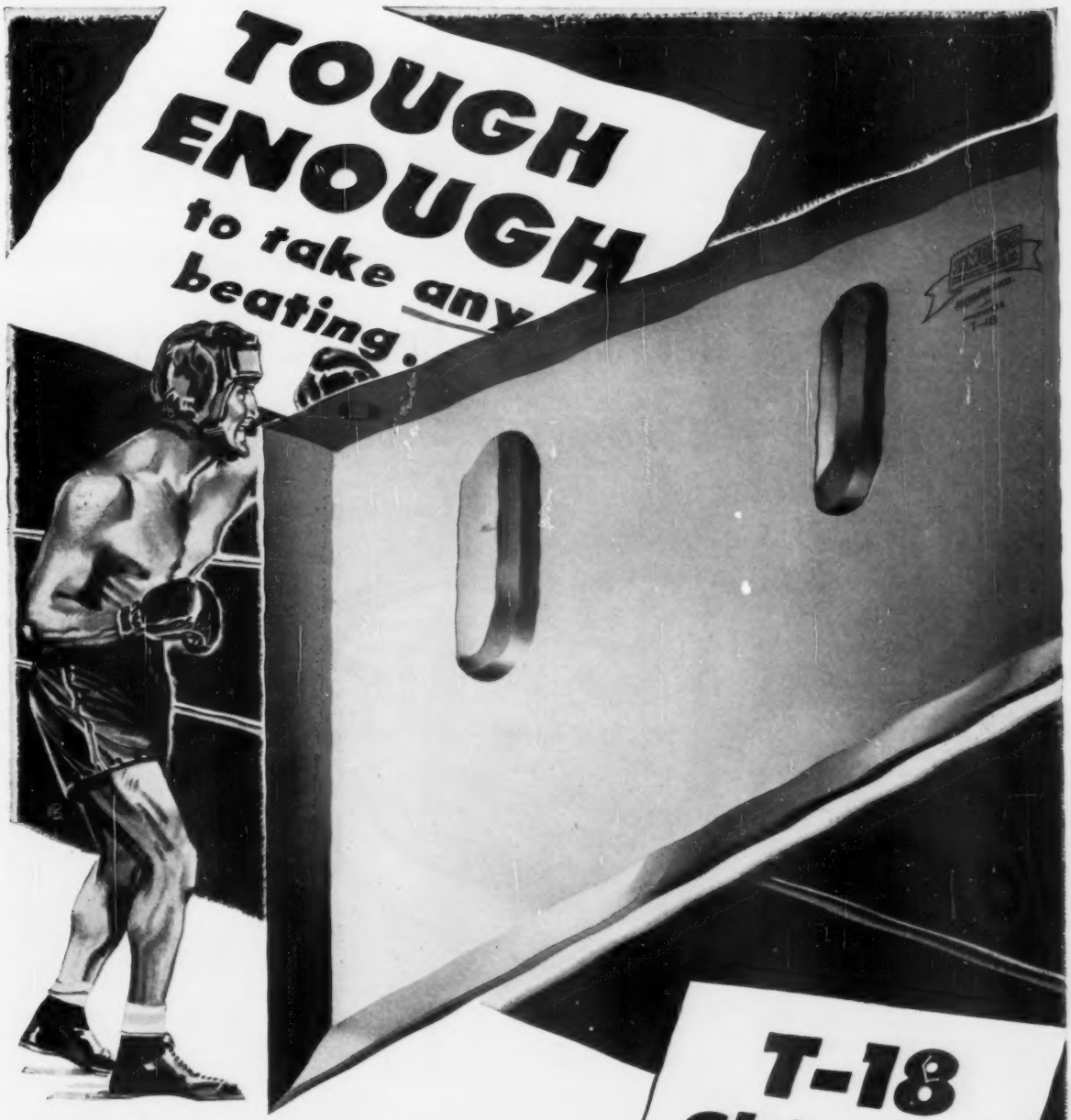
Jim is only son of the Earl (Mickey) McCourts of Wisconsin Rapids, Wis., where his father has been a veteran sales-production coordinator for Consolidated Water Power & Paper Co. and is Sales Mgr. for Pulp-Paperboard-Waxing Paper-Sulfite Specialties, By-Products for that company. Thanks to the James McCourts, the parents are able to enjoy two fine grandchildren occasionally.

NEWS FROM PACIFIC COAST

Rodger Sheridan Dies; Russ Lopez on Trip

JOHN RODGER SHERIDAN, 47, owner of Northwest Filter Cos. of Seattle and Vancouver, B. C., and United Engineer-

Continued on page 18



SIMONDS

T-18 Chipper Knives

Chips aren't bruised and "beat-up" . . . they're not mashed and of uneven length . . . when they come out from under a Simonds T-18 Knife. But they *are* uniform in size, and that means they "cook" more quickly and evenly . . . make better-grade pulp.

Make sure you aren't losing money in your wood room. Equip all your chippers with these extra-tough knives of special Simonds T-18 Steel. They hold their cutting edge . . . hold your chip-output up and your sawdust-loss down.

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SIMONDS SAW AND STEEL CO.
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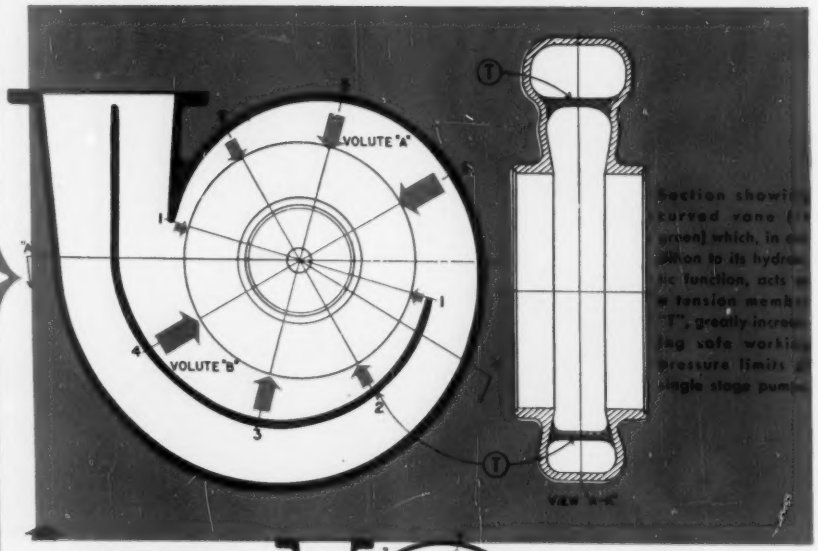
Factory Branches in Boston, Chicago, San Francisco and Portland, Oregon, Canadian Factory in Montreal, Que., Simonds Divisions: Simonds Steel Mill, Lockport, N. Y., Heller Tool Co., Newcomerstown, Ohio, Simonds Abrasive Co., Phila., Pa., and Arvida, Que., Canada

7 BIG REASONS WHY Bingham STANDARD EQUIPMENT

1. **"Double Volute"** permits use of special over-hung impellers for handling pumpage containing large volumes of *entrained* air.
2. **Extra case strength** resulting from tension member in **"Double Volute"** casing.
3. **No dilution.** Hydraulic Radial Balance resulting from "Double Volute" design permits shaft to rotate on true center reducing stuffingbox leakage to a minimum.
4. **Mechanical Seals.** Hydraulic Radial Balance permits mechanical seals to establish and maintain a uniform track between the contacting faces, thereby insuring long life and trouble-free service.
5. **"Double Volute"** construction eliminates "side push" of rotating element, reducing maintenance of rotating and stationary parts to a minimum.
6. **Unit type bearing** and rotating assembly is easily removable for inspection or repair without disturbing piping or driver.
7. **High operating efficiency.**

The Key to all these Benefits is the Bingham "Double Volute" Design



No "Side Push". Diagram of a "Double Volute" single discharge case of single-stage pump (above) showing the equal pressure on the opposite sides of impeller, insuring low maintenance.

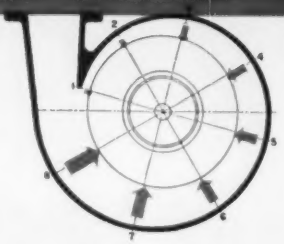


Diagram of "Single Volute" pump case (left) showing unequal pressure at opposite points around the periphery of the impeller. These unequal pressures cause "SIDE-PUSH" on the rotating elements, causing wear of rotating parts and, frequently, high maintenance.

NEW MAJOR MILLS recently placed in operation, or currently under construction, equipped throughout with Bingham "Double Volute" Pumps.

BUCKEYE CELLULOSE COMPANY
Foley, Florida

COLUMBIA CELLULOSE CORP.
Prince Rupert, B. C.

E. TEXAS PULP & PAPER
Evadale, Texas

KETCHIKAN PULP & PAPER
Ward Cove, Alaska

MacMILLAN & BLOEDEL, LTD.
Nanaimo, B. C.

RAYONIER, INC.
Jesup, Georgia

SCOTT PAPER COMPANY
Everett, Washington

TASMAN PULP & PAPER
Auckland, New Zealand

WESTMINSTER PAPER CO.
Westminster, B. C.

WEYERHAEUSER TIMBER CO.
Everett, Wash. & Longview, Wash.

POWELL RIVER PAPER CO.
Powell River, B. C.

CROWN ZELLERBACH PAPER CO.
Duncan Bay, B. C.

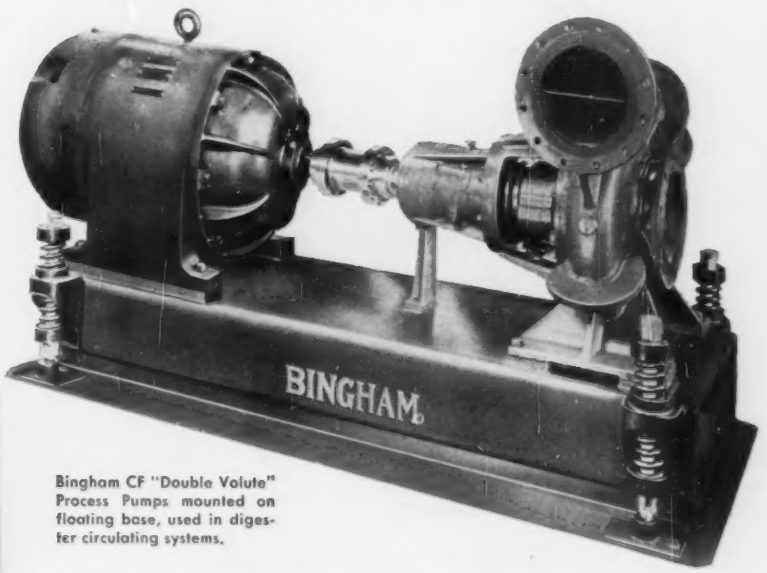
BINGHAM PUMPS TODAY ARE SERVING OVER 200 PULP AND PAPER MILLS

"DOUBLE VOLUTE" PUMPS ARE IN LEADING PULP and PAPER MILLS

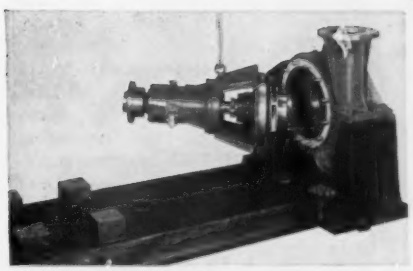
In leading pulp and paper mills today Bingham "Double Volute" Pumps are selected as *standard equipment* because of their consistent record over the years for continuous operation with minimum maintenance.

The CF Bingham pump illustrated below, for example, has established an enviable record for dependability and low maintenance in hundreds of pulp and paper mills — but no more so than a dozen other types of Bingham Pumps now serving the pulp and paper industry.

There are more Bingham Digester Circulating Pumps now in use and on order than the total number of pumps of all other makes used for this service.



Bingham CF "Double Volute" Process Pumps mounted on floating base, used in digester circulating systems.



EASY ACCESSIBILITY
Bingham Type CF Process Pumps feature unit type bearings and rotating assembly which is easily removable for inspection or repair.

Bingham "Double Volute" Pumps will best serve your pulp and paper mill operations, as they are now serving leading pulp and paper mills everywhere. Write to your nearest Bingham office for "Double Volute" Bulletin, or send data on your pumping problem.

Bingham SINCE 1921

DOUBLE VOLUTE PUMPS RADIAL BALANCE

BINGHAM PUMP COMPANY
General Offices: **2800 N.W. Front Avenue, Portland 10, Oregon**
Factories: **Portland, Ore. • Vancouver, B.C., Canada**

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TORONTO, ONT., CAN.
VANCOUVER, B.C., CAN.

STRICTLY PERSONAL

PACIFIC COAST NEWS, Continued

ing Cos. of Seattle and Portland, Ore., died of a heart attack Nov. 3 at his Seattle home. Born in New York, he was a Cooper Institute graduate and made tropical exploration expeditions with his father. He won a Stanford University prize as an outstanding student. His wife, Eleanor, and two children, survive. . . . **R. M. WILLIS,** chemical engineer with a master's from U. of Michigan and a partner in Standard Chemical & Engineering Co., is successor to Mr. Sheridan as manager of Northwest Filter Co. . . . **RUSSELL DE LOPEZ,** asst. to vice pres. (sales-traffic), Puget Sound Pulp & Timber Co., made a trip to the International Traffic League meeting in the east, and several other eastern points, including checking in at PULP & PAPER's editorial headquarters in Chicago. . . . The new Fullerton, Calif., paper mill of Kimberly Clark gained more new staff members from Neenah, Wis., including **STEVE CVENGROS,** absorbent converting asst. supt., **LEO McCOY,** mill office supt.; **JACK BLEIER,** head lab technician, **ROBERT BERNARD,** lab technician, **KEN BISEL,** head electrician, **CHARLES HANSEN,** industrial engineer, and others. . . . **GEO. CRANOR** is promoted to gen. supt., Salem, Ore., mill of Oregon Pulp & Paper, succeeding **BEN BECK** who went to East Texas P & P. **THEODORE HENRY,** who went west from Wisconsin last June, moved up to paper mill supt., **HARVEY McLAUGHLIN** to supervisor of paper machines, and **GLENN BOLNER** is supervisor of rewinders and supercalenders. . . . **KARL HEINLEIN** continues as res. mgr. at Salem. . . . **JAN HAUGEROD,** sulfite mill and bleach plant superintendent, Crown Z. West Linn, has retired after 26 years service.

KEY MEN to be at Antioch mill of Crown Zellerbach: CHESTER T. BEALS (left), from CZ Camas, with increased responsibilities in stock preparation; L. R. MULLINEAUX (right), to be in charge of steam production facilities. CZ's new kraft mill at Antioch goes into production next summer, with GUS OSTENSON as Manager.

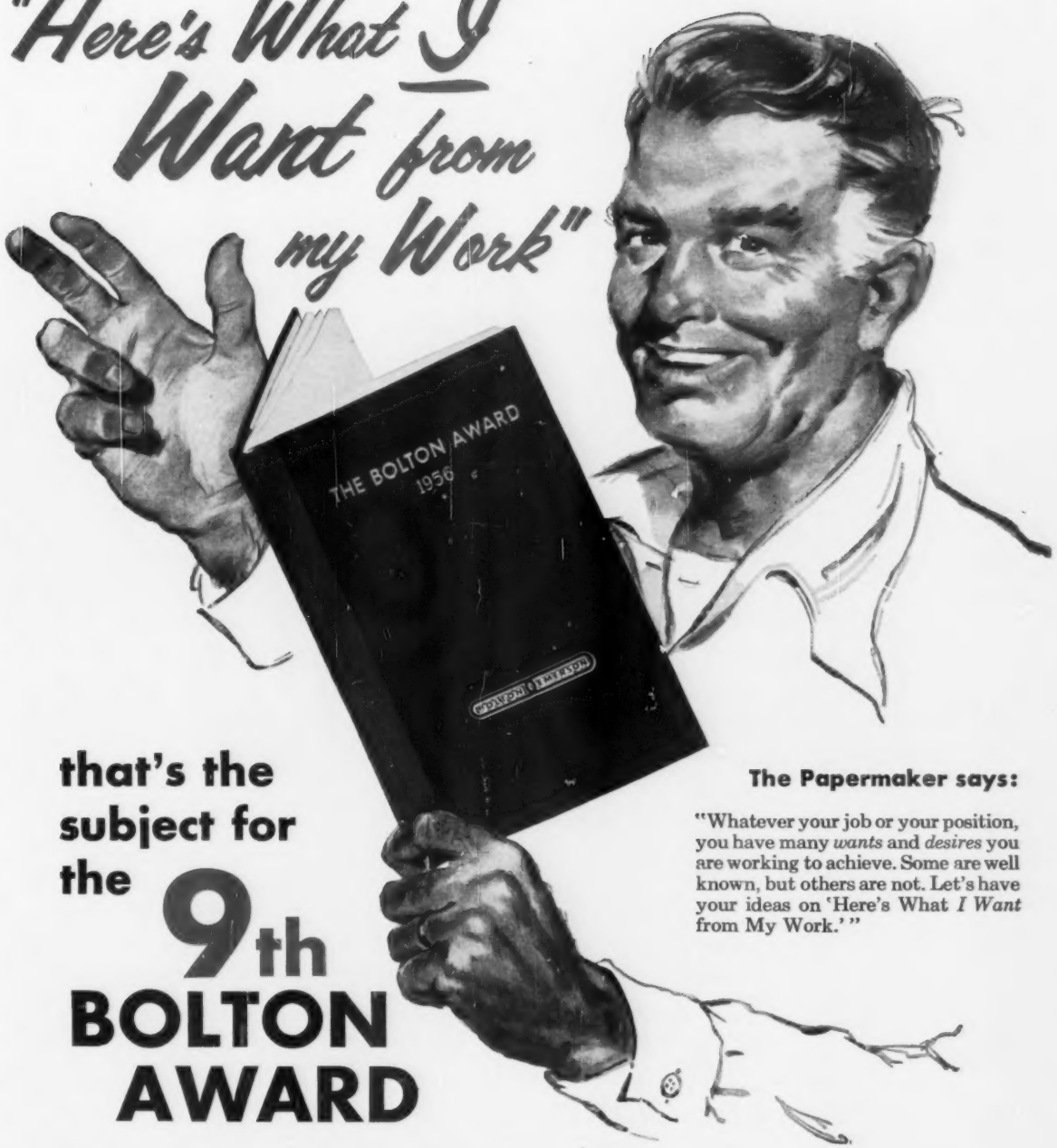
CZ personnel transferring to new Antioch, Calif., kraft paper mill includes **CHESTER BEALS,** from Camas where he's been technical assistant to paper mill supt., wrapping; **L. R. MULLINEAUX,** general supervisor, steam power maintenance and operation, Camas; **J. W. TILDEN,** assistant supervisor, purchasing, West Linn, Ore.; **A. W. WETMORE,** multiwall bag supervisor, San Leandro, Calif.; **L. R. WILSON,** personnel and safety supervisor, San Leandro.

. . . **C. J. McKINNIE,** formerly chemical engineer of CZ's Central Research Dept., is assistant superintendent of gumming operations, Western Gummed & Coated Products Div., CZ, North Portland. . . . **RAY E. FRITZ,** promoted from leadman to supervisor of CZ St. Helens mill. . . . **CHARLES E. YOUNG,** assistant superintendent of the Los Angeles gumming operations. . . . **KENNY PRINGLE,** finisher on No. 2 machine, Fibreboard Products, Port Angeles, Wash., recently was married. . . . **GEORGE AHLQUIST** has joined the new Western Kraft Corp. board mill at Albany, Ore.,

Continued on page 22

THEN it's time to investigate SENTRY®—the first high speed, continuous moisture detector to incorporate ALL features necessary for 100% control. Full-width scanning, accuracy throughout a wide range of basis weights and moisture contents, and its performance on both coated and uncoated products make it the most advanced quality control equipment on your production line. Write TODAY for literature. Laucks Laboratories, Inc., 1201 Poplar Place, Seattle 44, Washington. Representatives in principal areas of the United States. SENTRYS *for Pulp, Paper, Softboard, Plywood, Lumber, Veneer.*

"Here's What I Want from my Work"



that's the subject for the 9th BOLTON AWARD

The Papermaker says:

"Whatever your job or your position, you have many *wants* and *desires* you are working to achieve. Some are well known, but others are not. Let's have your ideas on 'Here's What *I Want* from My Work.'"

TEN NATIONAL PRIZES: $1,000, $750, $500 and seven of **$200** each.
OPEN to all pulp and paper mill employees in North America.
CLOSES midnight March 31, 1956.
MAIL your entry to: The Secretary and Treasurer, THE AMERICAN PULP AND PAPER MILL SUPERINTENDENTS ASSOCIATION, 327 So. La Salle St., Chicago 4, Illinois.
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PUGET PULP

in the manufacture of paper for all kinds of business forms

PUGET PULP is bleached sulphite—clean and clear enough for the finest product, strong enough for the hardest use.

PUGET PULP is produced in steadily expanding amount in one of the most scientifically up-to-date mills in America.

PUGET PULP is made expressly for the market. Converting mill users are assured of a steady supply from a single non-competitive source.

Gear your operations to **PUGET PULP.**

PUGET PULP

With output now exceeding 450 tons daily, more PUGET PULP is available for the market

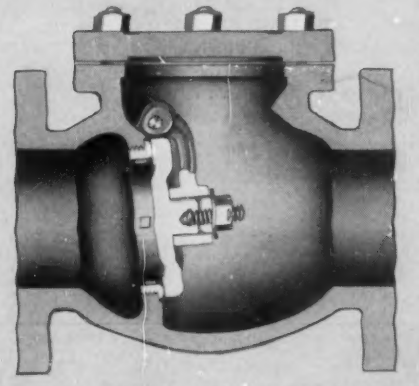
PUGET SOUND PULP AND TIMBER COMPANY

BELLINGHAM • WASHINGTON

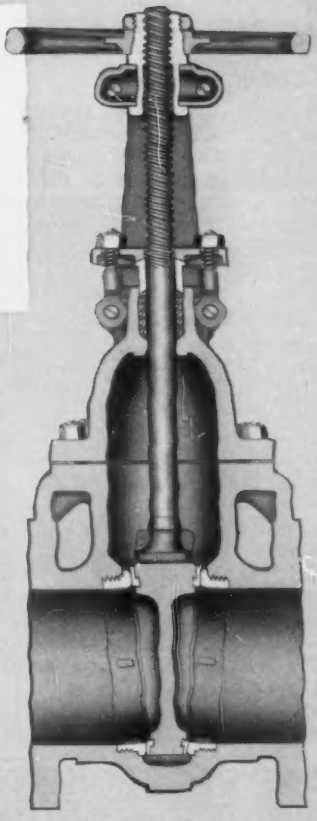
Economy Buy for Many Process Services

IN PULP AND PAPER, WOOD TREATING, CHEMICAL, PETROLEUM, ETC.

WORKING PRESSURES: GATES AND CHECKS
12 in. and smaller—200 psi W.O.G.
14 in. and larger—150 psi W.O.G.



Cross section, Check, No. 14493
Flanged ends



Cross section, Gate, No. 14477
Flanged ends

Crane Nickel Cast Iron Valves
IMMEDIATE DELIVERY from Factory Stocks

Why wait for low nickel alloy cast iron valves when you can get Crane quality—at no extra cost—immediately from factory stocks? Gates on hand in sizes: 2″—2½″—3″—4″—6″—8″—10″—12″—14″—16″—18″. Checks in all the same sizes up to 12″ incl. (14″—16″—18″ will be made to order). This delivery offer good while present stocks last.

These valves have an outstanding record in the pulp and paper industry in handling various alkaline liquors. In wood treating they're used successfully on creosote vapors and oils. They're ideal, in the petroleum industry, for handling oils containing traces of mineral acids.

Crane 18-8 SMo alloy trim in these valves combines with nickel alloy body to assure tight seating and smooth, maintenance-free operation. The gates have Crane features such as: full-length disc guides . . . 2-piece ball-type gland . . . T-head disc-stem connection.

The checks feature all 18-8 SMo trim, including body ring, disc, hinge and hinge pin in sizes 2 to 12 inches. Valves 14 inches and larger have disc same as body, with 18-8 SMo disc faces.

You'll save with these valves on original cost and maintenance. Call a Crane Representative for immediate delivery! Crane Co., General Offices, Chicago 5. Branches and Wholesalers in all industrial areas.

CRANE *Since 1855*

VALVES & FITTINGS • *PIPE* • *KITCHENS* • *PLUMBING* • *HEATING*

STRICTLY PERSONAL

PACIFIC COAST, continued

as project chemist. He was with Longview Fibre. . . . **"PETE" PETERSON,** for ten years with Hercules Powder out of Portland, Ore., moved east to the Hercules Milwaukee plant. . . **F. J. HERB,** pres., and others of Pacific Coast Paper Mills staff have moved into a new office building at Bellingham. . . . **LENUS PFEFFER,** gen. finishing supervisor at Rayonier, Hoquiam, Wash., has retired after 50 years in paper mills, 25 years at Hoquiam and 25 at Hammermill's Erie, Pa., mill. **DON MURCHISON** succeeds him as gen. finishing supervisor at Hoquiam. . . . **BRUCE W. JOHNSON** is asst. mgr., Northwest industrial relations, Rayioner, with offices in Seattle, serving under **LYALL TRACY,** Northwest industrial relations mgr. . . . **FRANK K. DONNELLY,** 401 East 92nd St., Seattle, is new sales rep. in Oregon and Washington for Torit Mfg. Co., St. Paul, Minn., makers of collectors for noxious dusts, fumes, etc. . . . **JIM SEARER** is now travelling in North California as sales rep. for American-Marietta resins. . . . **BAYARD L. CARLSON,** ch. e. of Nebraska, takes over Mr. Searer's former Washington territory, working out of Seattle. . . .

MEMOS FROM THE MIDDLE WEST

Fork Horn Buck for Stanton Mead; Stevens Joins Lawrence Board

STANTON MEAD, president of Consolidated Water Power & Paper, got himself a fork horn buck on the second day of the deer season in Wisconsin. . . . **RUDOLPH BLOCK,** finishing dept. tour foreman, Escanaba Paper Co., Escanaba, Mich., and Mrs. Block celebrated their silver wedding anniversary. . . . **JOHN STEVENS JR.,** president of Marathon Corp., has been elected a trustee of Lawrence College. . . . **E. J. GILMAN** has been named vice pres. and plant mgr. of Allied Paper Mills of Michigan by the new owners, Thor Corp. of Chicago. . . . **CHARLES F. CHAPLIN** is new vice pres. and sales mgr. of Allied Paper Mills, **WILLIAM A. KIRKPATRICK** is vice pres. and tech. director, and **HERB JOHNSTON** is vice pres. and plant engineer for the Thor division. . . . **S. D. PAYZER,** v.p. for engineering, succeeds the late Clark Everest as a director of D. J. Murray Mfg. Co., other directors being Pres. **ARNOLD PLIER, GEO. L. RUDER, PAUL HOPER, W. A. MARQUARDT, F. C. BOYCE** and **M. P. McCULLOUGH.** . . . **KENNAN M. HUTCHINS,** production mgr., Neenah Paper Co., who was 61, died suddenly of a heart attack while playing volley ball.

Continued on page 26

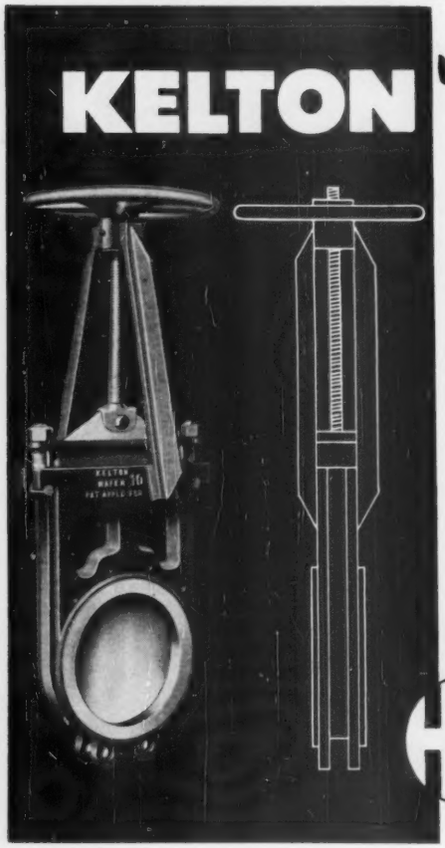
Kingsbury Promoted by Allis-Chalmers; Manley Serving Nalco

HERBERT K. KINGSBURY (left) is new Manager of Product Sales, Centrifugal Pump Section, Allis-Chalmers Norwood Works. He joined Allis-Chalmers in 1943 after receiving his m.e. degree from Marquette U.

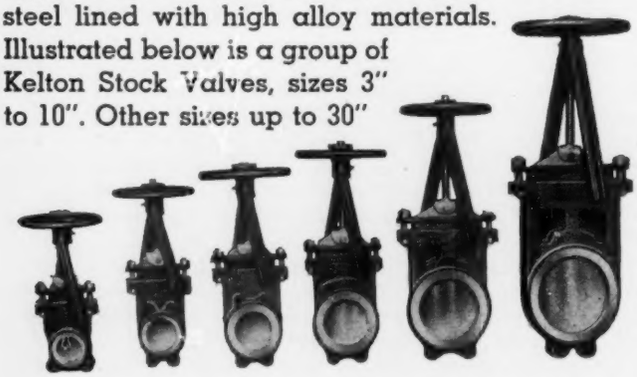
JOHN A. MANLEY (right) has been named a Field Rep. for Industrial Sales Div. of National Aluminate Corp. Former representative for Du Pont Chemicals and Lockport Felts, Mr. Manley has been assigned to Wisconsin and Upper Michigan territory. He will headquarter in Appleton, Wis. He is a ch.e. graduate of Lehigh U.

KELTON "Wafer" STOCK VALVES

GIVE RELIABLE SERVICE TO THE PULP & PAPER INDUSTRY



These thin face-to-face valves can be supplied in cast stainless steels, or cast steel lined with high alloy materials. Illustrated below is a group of Kelton Stock Valves, sizes 3" to 10". Other sizes up to 30"

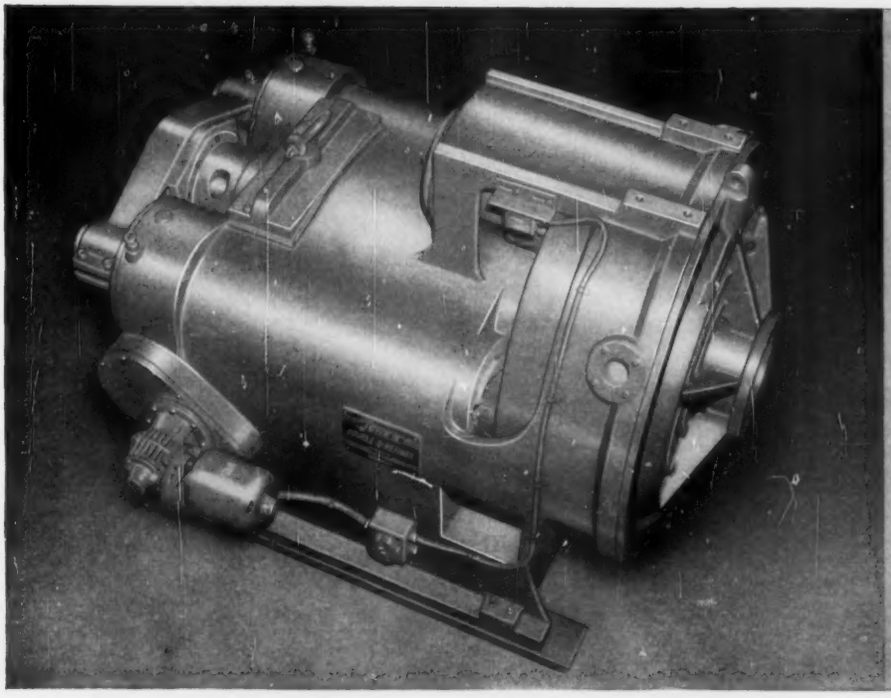


Manufactured by:

HK EQUIPMENT CO.

5981 N. CHANNEL • PORTLAND 18, OREGON

Jones DOUBLE-D WITH DOUBLE EQUA-FLO EFFECT



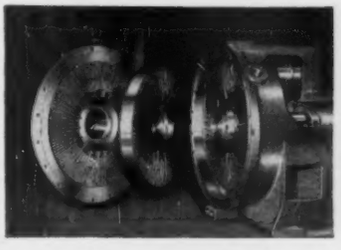
This overhead view illustrates the compactness of the Double-D. Very economical of floor space, it can be located and piped up in much the same manner as a conventional Jordan.

Consistently does the work of two or more conventional refiners . . .

You're looking at the new Jones Double-D Refiner first truly pressurized disc refiner — clean-lined, compact, easy to operate, easy to maintain . . . and already setting performance records.

For the Double-D is a *proven* machine. Full-scale production units have been in operation in several mills for as long as 18 months — and in fact several mills have already re-ordered.

They report stock quality equal or better than any other refiners, with substantial savings in time, horsepower and floor-space. Ask your Jones representative for details or write for Bulletin No. EDJ-1083.



This "exploded" photograph shows the heart of the Double-D. Stock passing under constant pressure between two rotating and two stationary discs receives true two-pass refining . . . double effect.

E. D. Jones & Sons Company
Pittsfield, Massachusetts
BUILDERS OF QUALITY STOCK PREPARATION MACHINERY

Jones

In Canada:
The Alexander Fleck, Ltd., Ottawa

SELF-DOCTORING TOPRESS ROLLS

rubber covered by GRIFFITH OF PORTLAND

THE MOST ADVANCED DEVELOPMENT IN RESILIENT ROLL COVERINGS SINCE THE INTRODUCTION OF RUBBER COVERED SUCTION ROLLS

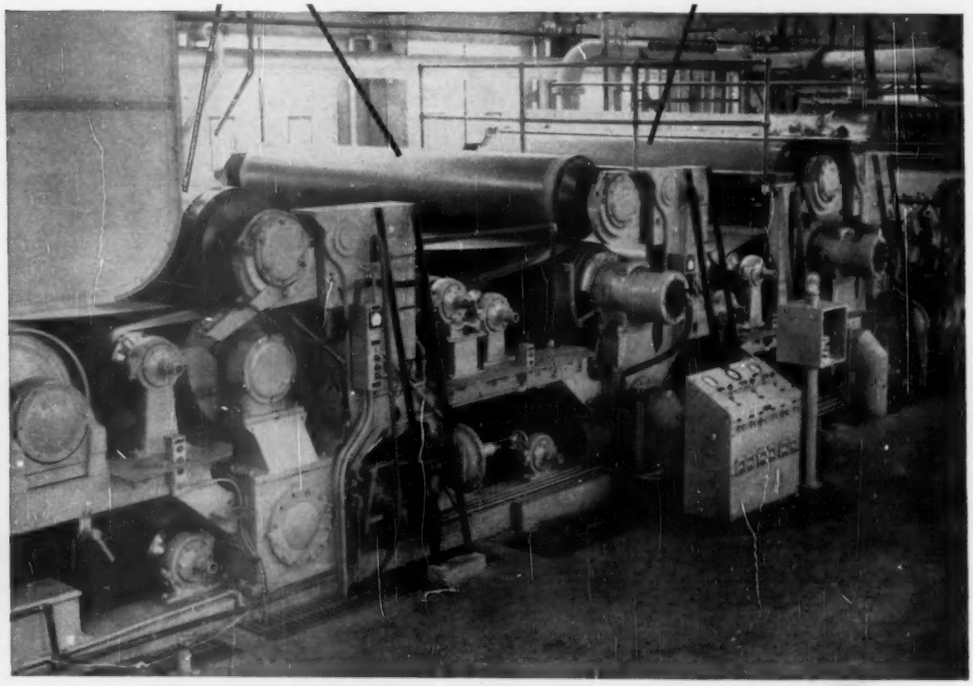
The Self-Doctoring Topress rolls covered by GRIFFITH will not pick the sheet because a special improved rubber cover compound is used. Breaks in the sheet contacting the Topress Rolls are eliminated. Doctor Blades may be entirely removed from the machine—or their use discontinued.

With the installation of GRIFFITH Self-Doctoring Topress Rolls on an open top press, you gain the advantage of resilient rolls of the hardness required for best operation. This gives better water removal at higher speeds, plus much longer felt life.

Three GRIFFITH covered S.D.T. Rolls are used on Weyerhaeuser Timber Company's 400-ton-per-day machine at Springfield, Oregon, running at 1,200 ft. per minute.

SECOND & THIRD PRESSES — GRIFFITH covered Self-Doctoring Topress Rolls with Doctor Blades and Holders permanently removed from machine.

FIRST PRESS — GRIFFITH covered Self-Doctoring Topress Roll with Doctor Blade off the roll.



WRITE, WIRE OR TELEPHONE FOR AN ESTIMATE ON YOUR JOB

Griffith RUBBER MILLS

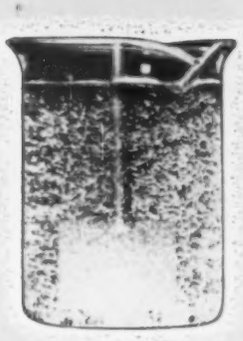
2439 N. W. 22nd AVENUE
***PHONE:* CAPITOL 3-7126**
PORTLAND, OREGON

RUBBER ROLL SPECIALISTS SINCE 1911

A New, Better Coagulant

NALCO 600

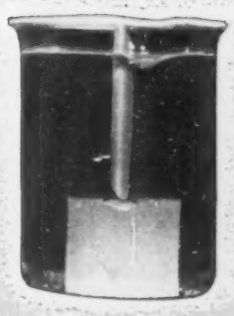
POLYELECTROLYTE



Alum

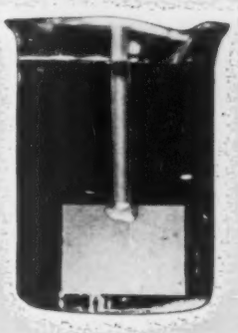
● As a coagulant in water clarification, and under many process coagulation conditions, new and different Nalco 600 has shown such great promise, both in performance and economy characteristics, that it has now been made available for general use as an established member of the Nalco family of chemical aids to industry.

Extremely difficult coagulation conditions provide especially economical applications for Nalco 600. It can be used alone or in conjunction with other coagulants. A very low dosage of Nalco 600 usually permits as much as 50% reduction in dosage of alum, activated silica, iron sulfate or clay type treatments . . . and results in a cleaner, clearer supernatant liquid.



Alum plus typical polyelectrolyte

Nalco 600 was invented in the Nalco Laboratories, and is being manufactured *only* by Nalco. For complete data on Nalco 600, and expert technical assistance to solve your clarification and coagulation problems, call Nalco now.



Alum plus Nalco 600

NATIONAL ALUMINATE CORPORATION
Telephone: POrtsmouth 7-7240
6213 West 66th Place • Chicago 38, Illinois
IN CANADA: Alchem Limited, Burlington, Ontario
NORTHWESTERN UNITED STATES, HAWAII and ALASKA
The Flox Company, Inc., Minneapolis 3, Minnesota
ITALY: Nalco Italiana, S.p.A. SPAIN: Nalco Espanola, S.A.
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STRICTLY PERSONAL

MIDDLE WEST MEMOES, Continued

His wife had died in Oct. . . .HARRY F. LEWIS, vice pres. of the Institute of Paper Chemistry, addressed the American Chemical Society in Houston, Tex., on manpower in science and in a brief period he was also out in Walla Walla, Wash., telling Whitman College students about careers in chemistry. . . . MASON HINKLE is new supt. of paper mills, WAYNE GALLAGHER is asst. supt. of No. 2 Paper Mill, and WAYNE MANOR is asst. maintenance planner in promotions at The Mead Corp.'s Chillicothe, O., division. . . . JOHN L. CLOUSE, asst. to mill mgr., Oxford Miami Paper Co., West Carrolton, O., is chairman of an Ohio TAPPI section education committee to interest high school students in careers in Ohio mills. . . . JIM WHELAN's present from the Kimberly-Clark engineers club when he retired as chief engineer, to be succeeded by RUSTY JOHNSON, was a bowling game machine with intricate bells and sirens. . . . ART PARKER from Niagara mill, and IRV KERSTEN from Kimberly mill, have joined DICK MARTINEK's paper dept. in the Kimberly-Clark research and development division at Neenah, Wis. . . . WALLACE M. LARLEE, who has had experience in Canadian paper mills, is Stein, Hall & Co. representative at Detroit, for Michigan, east Indiana and north Ohio, and continues as its paper mills consultant in Canada. . . . RAYMOND HUDAK, formerly in converting, has joined the engineering dept., Charmin Paper Mills. . . . JACK WEAVER, formerly with Rochester Paper Co., is plant mgr., Wolverine Fabricating & Mfg., Dundee, Mich. . . . GARDNER CHIDESTER, chief of pulp-paper, U. S. Forest Products Lab, Madison, Wis., made a month-long trip to Surinam (Dutch Guiana) in South America to study suitability of tropical woods there for pulp and paper uses. . . . WM. S. SHERERTZ, 5707 W. Lake, Chicago, is Midwest rep. for Hygrotester Inc.

COLUMN FROM CANADA

New Spruce Falls Supt.; Christensen Enjoys Birthday

JOHN TRUSCOTT is new paper mill supt,. Spruce Falls Power & Paper Co. He moved there from the Kapuskasing tissue mill. . . . ANDREAS CHRISTENSEN, celebrated his 63rd birthday in mid-November and is still going strong as Spruce Falls Power & Paper Co.'s production manager. . . . GEORGE W. CHARTERS, former asst. resident mgr. of Crown Z's Camas mill, has joined H. A. SIMONS, consulting engineer, Vancouver,

Continued on page 30

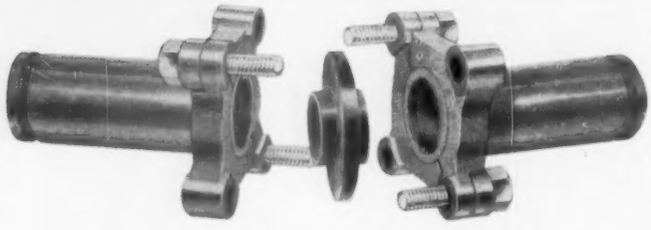
In Middle West News

ANTHONY W. HUBERTY (left), new Sales Engineering Rep in Midwest—Ill., Mich., Ohio, Ind. and West Pa.—for Improved Machinery Inc. He has had five years in industrial sales in the Midwest paper industry, and 18 years in all. He is a graduate of Northwestern U. and resides with wife, Donna, and two sons at 6048 No. Albany Ave., Chicago.

JOSEPH ANDERLIK (right), promoted to Advertising Mgr. of Consolidated Water Power & Paper Co., announces Harold Murtfeldt, Sales Mgr., Chicago. Mr. Anderlik will continue as Sales Promotion Mgr., a post he has held for three years. He is also a graduate of Northwestern U.

Gaco

RUBBER-LINED SYSTEM SIMPLIFIES YOUR PIPING PROBLEMS . . .



The GACO split flange is the ultimate in engineering simplicity. Pipe is prepared for joining by grooving ends and counterboring rubber lining. Rubber gasket is fitted into the pipe ends. Split flanges are wrapped around grooved pipe section and bolted together to complete the assembly of the GACO joint. The GACO System is adaptable to any type of rubber-lined pipe installation.

Save time and reduce costs on piping installations and repairs. Write for a copy of GACO Rubber Lined Pipe System catalog today.

GATES ENGINEERING COMPANY • WILMINGTON 99, DELAWARE

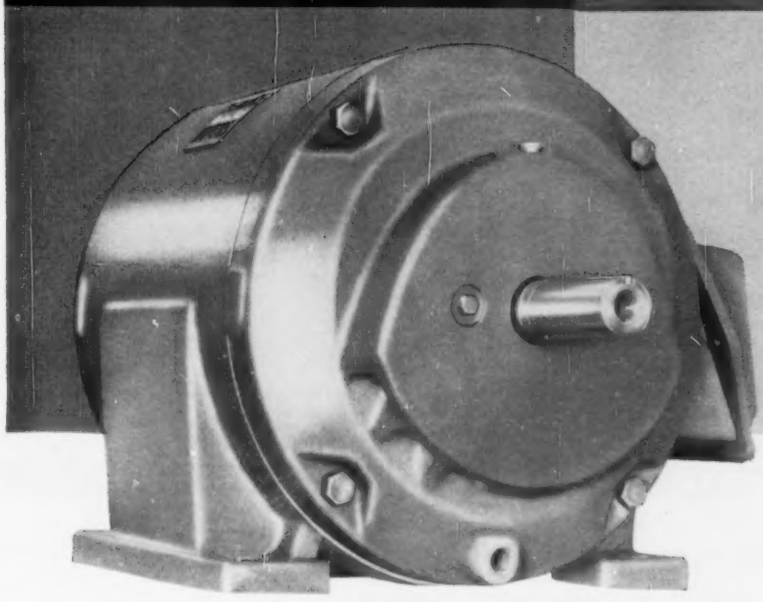
1. ELIMINATES DESIGN ENGINEERING . . . Rubber-lined pipe can be cut to size and installed at the job site from a sketch of the installation.

2. 360° ROTATION . . . Flexibility of the free turning GACO split flange principle assures that every installation will line up on the job. The GACO flange hole pattern rotates around the pipe, conforming to all standard, rubber-lined fittings.

3. FOUR WAY SEALING . . . GACO rubber gasket has a four-way sealing feature, giving leakproof service up to 1600 pounds pressure and 28" vacuum.

4. UNINTERRUPTED FLOW . . . The GACO joint presents uninterrupted flow to the liquid stream through the entire GACO pipe system.

Totally Protected



FROM CORE TO COVER

RELIANCE *Totally-Protected* MOTORS

The total protection concept of design and construction armors Reliance A-c. Motors against everyday hazards, with little or no maintenance. Total protection is made up of extra features like:

Slot cell insulation of Double Backed Mylar

Dynamically balanced rotor for vibrationless operation

Entire insulation system impervious to acids, moisture and oils

Metering plate regulates grease flow to bearing

Ventilation louvres positioned high and dry in end brackets

There are 100 of these extra core to cover protection features in Reliance Motors. Each point is covered in our bulletin, "Check the 100 Facts". Why don't you write for one and get all the details? B-1510

RELIANCE ELECTRIC AND ENGINEERING CO.

Cleveland 10, Ohio • Offices in Principal Cities

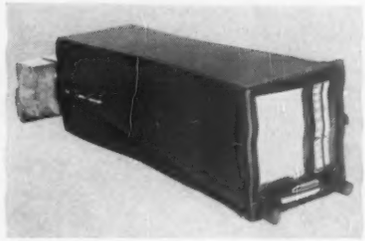
Canadian Division: Welland, Ontario

FP *complete process instrumentation*

Fischer & Porter's clean and easy-to-read Control Panel Board for the New York & Pennsylvania Company

Perfection by Centralization of Product Instrumentation

A complex problem resolved by F&P's integrated design and control instrumentation systems



Send for details on the F&P Ratographic PneumaticRecorder-Controller, offering 4-inch strip chart record. No obligation involved.

The New York & Pennsylvania Co., maker of fine book and specialty papers, was faced with converting its Johnsonburg, Pa., mill from batch-type stock preparation to one of continuous automatic stock preparation. This involved simultaneously integrating into a centralized control station five separate blending systems with a complete refiner control unit feeding five separate paper machines.

F&P, with its comprehensive design and engineering know-how, executed this conversion efficiently and completely. Costs were kept at a minimum because a complete unit was delivered by one team. All instruments and fabrication are of F&P design and manufacture, and therefore of perfectly matched components. Stock is measured and controlled by F&P Ratosleeve Meters and F&P Ratogate Valves, specifically designed for this industry.

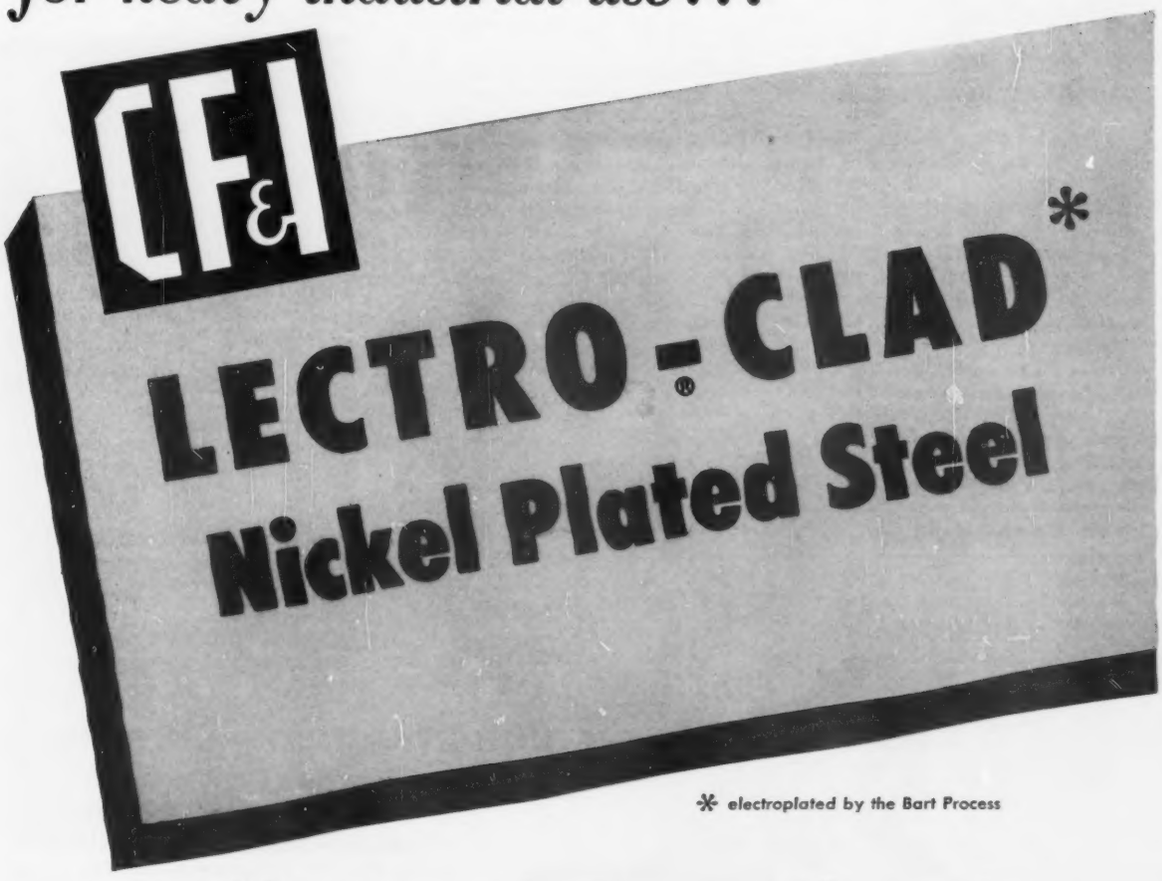
Write F&P today telling about your problems or needs—without obligation.

FISCHER & PORTER COMPANY
2116 COUNTY LINE ROAD • HATBORO, PA.

Measuring, recording and controlling instruments
Centralized control systems
Data reduction and automation systems
Chlorination equipment
Industrial glass products

Sales offices in 32 American cities and in principal cities abroad

for heavy industrial use . . .



* electroplated by the Bart Process

provides economical protection against product contamination and discoloration

It is no longer necessary to spend large sums of money to get protection against product contamination and discoloration in heavy industrial applications. It's available *at a surprisingly low cost* when you use CF&I LECTRO-CLAD Nickel Plated Steel Plates, Sheets, Heads, Pipe and Fittings.

Proven during more than ten years of use by the Atomic Energy Commission and leading chemical processing firms, these products have all the strength of the carbon steel to which the plating is applied. In addition, they have a uniform, electro-deposited coating of pure nickel for maximum protection. The nickel will not check, spall or flake even when subject to the severest forming processes.

Perhaps you can use CF&I LECTRO-CLAD Nickel Plated Steel to advantage in your own operations. For complete details on applications and fabrication, write for our new LECTRO-CLAD Technical Manual—Wickwire Spencer Steel Division, The Colorado Fuel and Iron Corporation, P. O. Box 1951, Wilmington, Delaware.

3417

CF&I *Claymont Steel Products*

Products of Wickwire Spencer Steel Division • The Colorado Fuel and Iron Corporation

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Other Claymont Products . . . Stainless-Clad Plates • Manhole Fittings and Covers • Large Diameter Welded Steel Pipe • Flame Cut Steel Plate Shapes
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STRICTLY PERSONAL

CANADA COLUMN, continued

B. C. Mr. and Mrs. Charters rented a home in Vancouver but retain their "farm home" in Camas. . . . **R. J. ASKIN**, vice president, Abitibi Power & Paper Co., visited the Pine Falls mill of the subsidiary Manitoba Paper Co. recently to help celebrate production of over 400 tons newsprint daily. The mill hopes to hit 500 tons by 1957. . . . **FRED O. SOUGHTON**, services and safety supervisor at LongLac Pulp & Paper Co., Terrace Bay, Ont., was elected vice chairman and program chairman of the Pulp and Paper Section of the National Safety Council at Chicago. . . . **THOMAS FOULKES**, chief plant engineer, E. B. Eddy Co., will be discussion leader on paper mill maintenance problems at the Plant Maintenance and Engineering Show in Philadelphia Jan. 23. . . . **C. N. CANDEE**, assistant manager of Cornwall division, Howard Smith Paper Mills, is now in South Africa in a consulting capacity to improve quality for South African Pulp & Paper Co., with which Howard Smith is associated. . . . **DOUGLAS R. READ**, formerly general manager of Industrial Cellulose Research, Ltd., a subsidiary of Canadian International Paper Co., has been named executive vice president. . . . **JOSEPH SHEMKA**, graduate of University of British Columbia, has been named technical supervisor of the Harmac mill, MacMillan & Bloedel, succeeding **DON BAKER**, who has joined B. C. Forest Products as assistant manager of the new mill at Crofton. . . . **DON LLOYD**, former chemist at Crown Z's Ocean Falls mill, is new technical supervisor of the Port Alberni mill of MacMillan & Bloedel.

Powell River Men Promoted

KENNETH B. FINN (left), has been appointed Comptroller of Powell River Co., succeeding H. JOHN BURNS, recently named Exec. Asst. to President M. J. FOLEY. J. GILBERT D'AOUST (middle) former Project Engineer on expansion, has been appointed Plant Engineer, succeeding DONALD M. STEWART, who has joined the Sandwell engineering organization. W. W. WOODWARD (right) with the company 31 years, has been named Manager of Powell River Sales Co.'s office at Powell River.

Let us put the SQUEEZE

ON HIGH EVAPORATING COSTS!

. . . and give you assured results, too!

From start to finish, Swenson offers much more than the equipment alone. You can get preliminary product research and testing in the Swenson laboratory . . . evaporators that are custom-engineered for your products . . . surveillance of operation and periodic checks after installation.

Swenson engineers, with over 65 years of experience, will counsel with you about economy, capacity, construction and operation of long-tube evaporators, forced circulation and other types.

You can carry economy into other parts of your operations by including Swenson pulp washing, heat recovery and filtering, too. Take this step toward greater savings and efficiency by writing for your copy of the Swenson catalog.

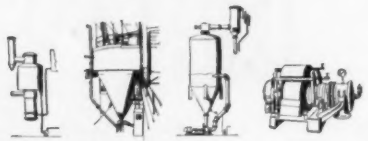
SWENSON EVAPORATOR CO.
15632 Lathrop Avenue, Harvey, Illinois

SWENSON

Proved Engineering for the Process Industries

SINCE 1889

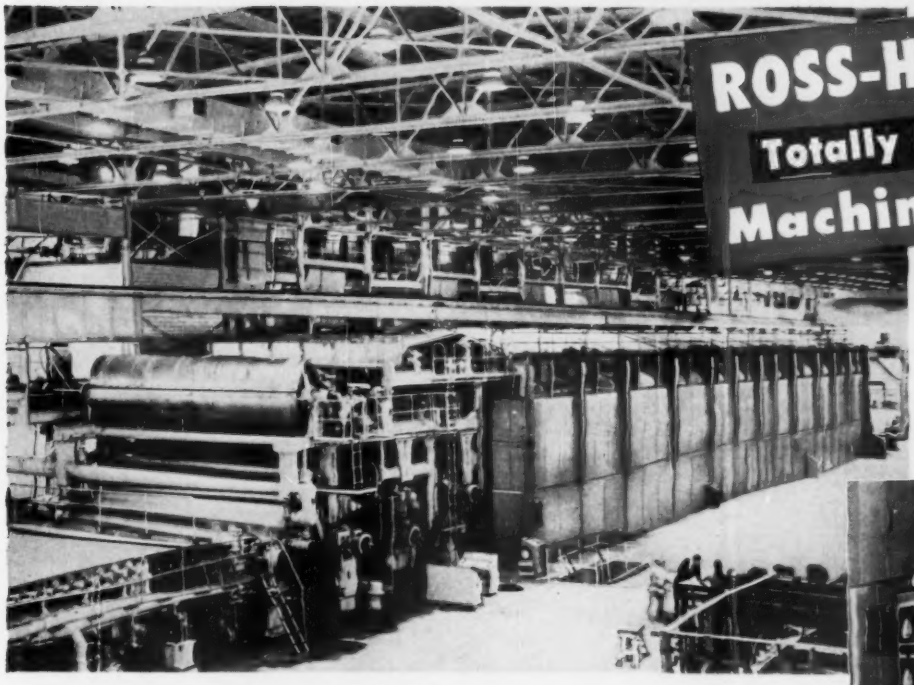
A Division of WHITING Corporation



Evaporators Spray Dryers Crystallizers Filters

GREAT NORTHERN'S new machine...

the industry's first in the U. S. A. to get the operating advantages of the



Pat. Pending

with greater heat recovery, less fresh air and power is required

Great Northern Paper Company scores another "first" by completely encasing its entire 375 foot long machine in a totally enclosed ROSS-HOOPER aluminum sliding panel hood. Besides reducing air and steam requirements, other advantages secured are—better vapor confinement, reduced back pressure, fewer breaks and more uniform moisture content of sheet. Here's a machine ideally equipped to achieve an entirely new standard of performance.

In addition to the hood and complete ROSS MIDWEST FULTON Drainage System the machine room and practically all other rooms throughout the mill are equipped with the newest ROSS Systems for heating, ventilating, cooling and conditioning.

Above: Dry end, hood door being lifted for access to sweat roll.

Below: View of enclosed hood looking toward wet end.

J. O. ROSS ENGINEERING
CORPORATION
MANUFACTURERS OF AIR PROGESSING SYSTEMS
444 MADISON AVENUE NEW YORK 22, N. Y.

ATLANTA • BOSTON • DETROIT • CHICAGO • SEATTLE • LOS ANGELES
ROSS ENGINEERING OF CANADA, LIMITED, MONTREAL, CANADA • CARRIER-ROSS ENGINEERING COMPANY, LIMITED, LONDON, ENGLAND

The oldest in experience
presents the newest
in centrifugal

STOCK CLEANING

THE NICHOLS FREEMAN

VORJECT
Trade Mark

Cleaner

PRIMARY

SECONDARY

The original designers of centrifugal stock cleaning equipment now introduce a completely new stock cleaner incorporating a tangential rejects system that assures the trapping and immediate separation of foreign material. Design features prevent adding air to stock.

- No insuction of air
- High shive removal efficiency
- Low fibre losses
- High capacity per unit
- Stainless steel construction at low cost

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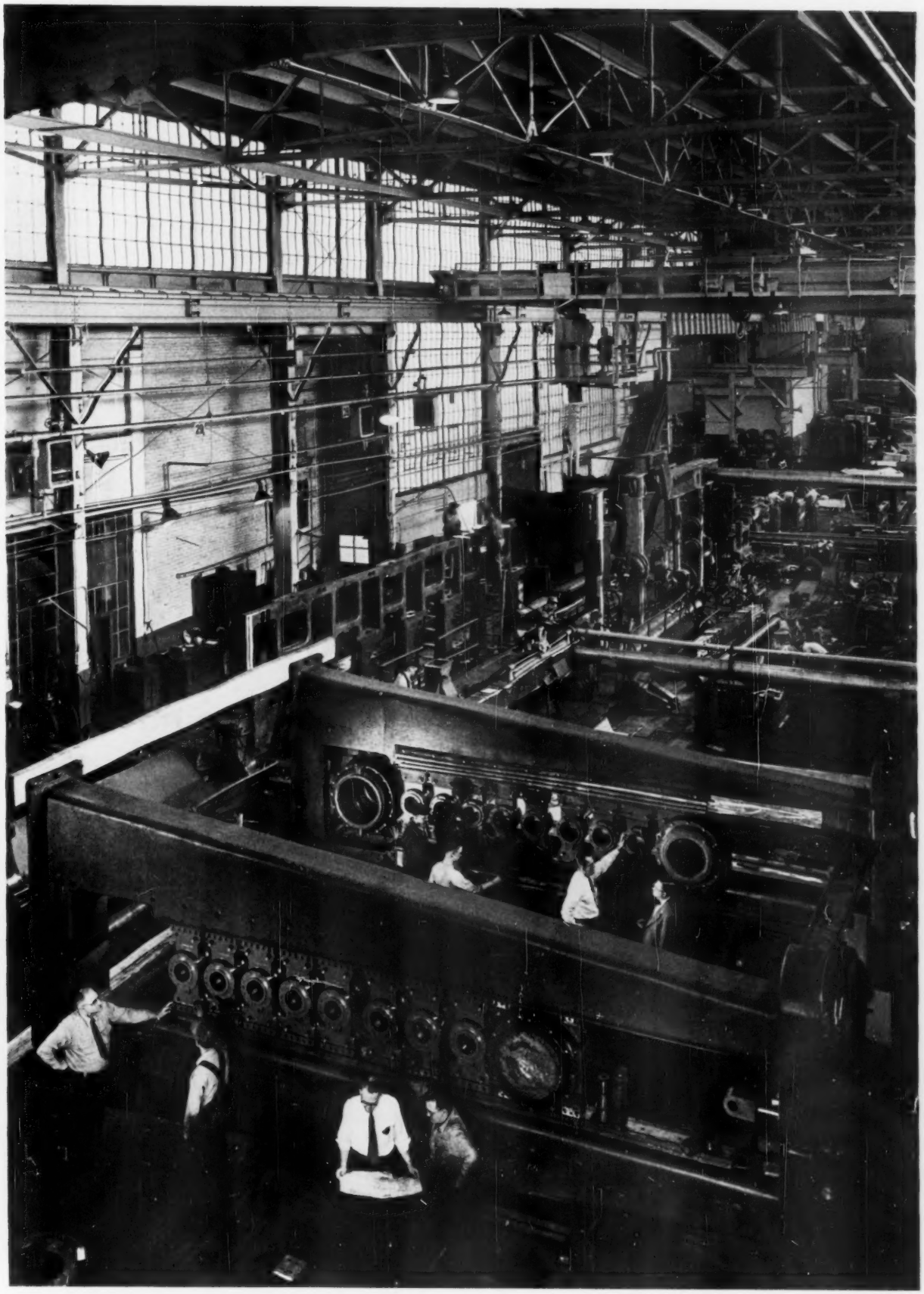
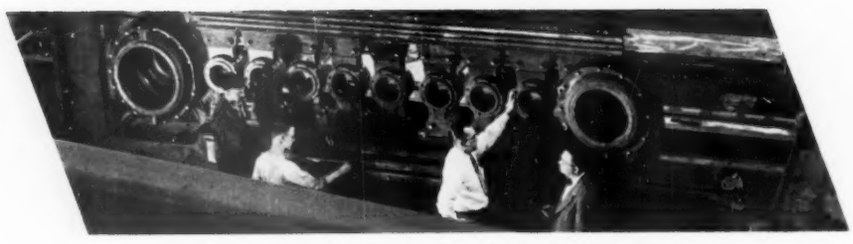
. . For use in Pulp Mills, De-Ink Plants and on Fourdrinier and Cylinder Machines



TORKEL KORLING

FINAL INSPECTION . . . *Erecting floor, Beloit Iron Works.* | *For further details, please turn the page.*



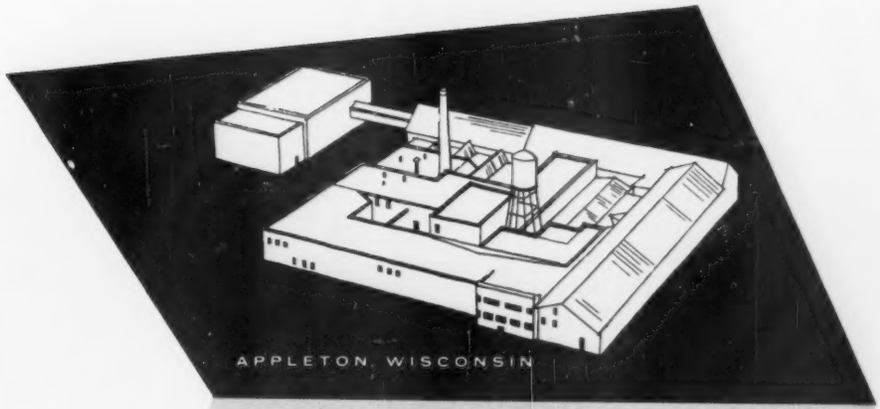
FINAL INSPECTION

The photograph on the preceding page shows a portion of the main erecting floor and adjacent shipping area at Beloit Iron Works, Beloit, Wisconsin. The main erecting floor, over 500 feet long, provides the floor space, the overhead clearance, and the heavy-duty bridge cranes needed to assemble and check the completed sections of a paper machine. Simultaneous erection of super calender, dryer framework, and press section provides clear and dramatic evidence of size and facilities.

your partner in papermaking **BELOIT**
PAPER MACHINERY

BELOIT IRON WORKS · PAPER MACHINERY · BELOIT, WIS., U.S.A.

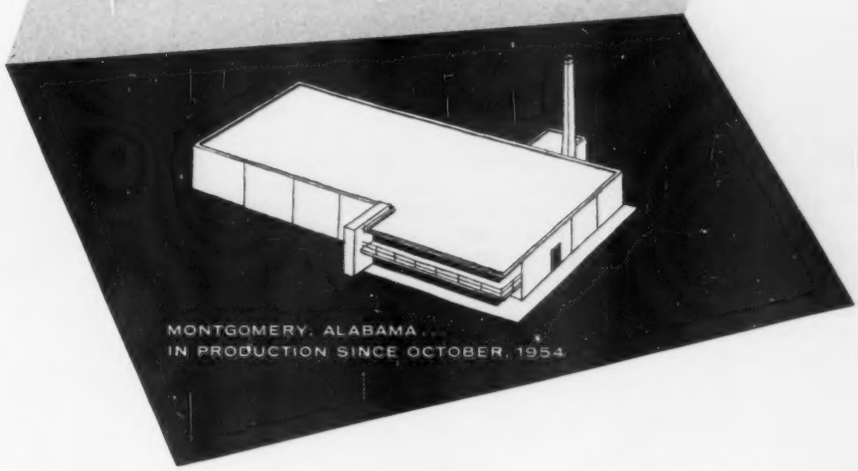
WHEN YOU BUY BELOIT...YOU BUY MORE THAN A MACHINE!



APPLETON, WISCONSIN

Confidence in the paper industry

Foresight to anticipate changing conditions and requirements of the paper industry with new manufacturing facilities

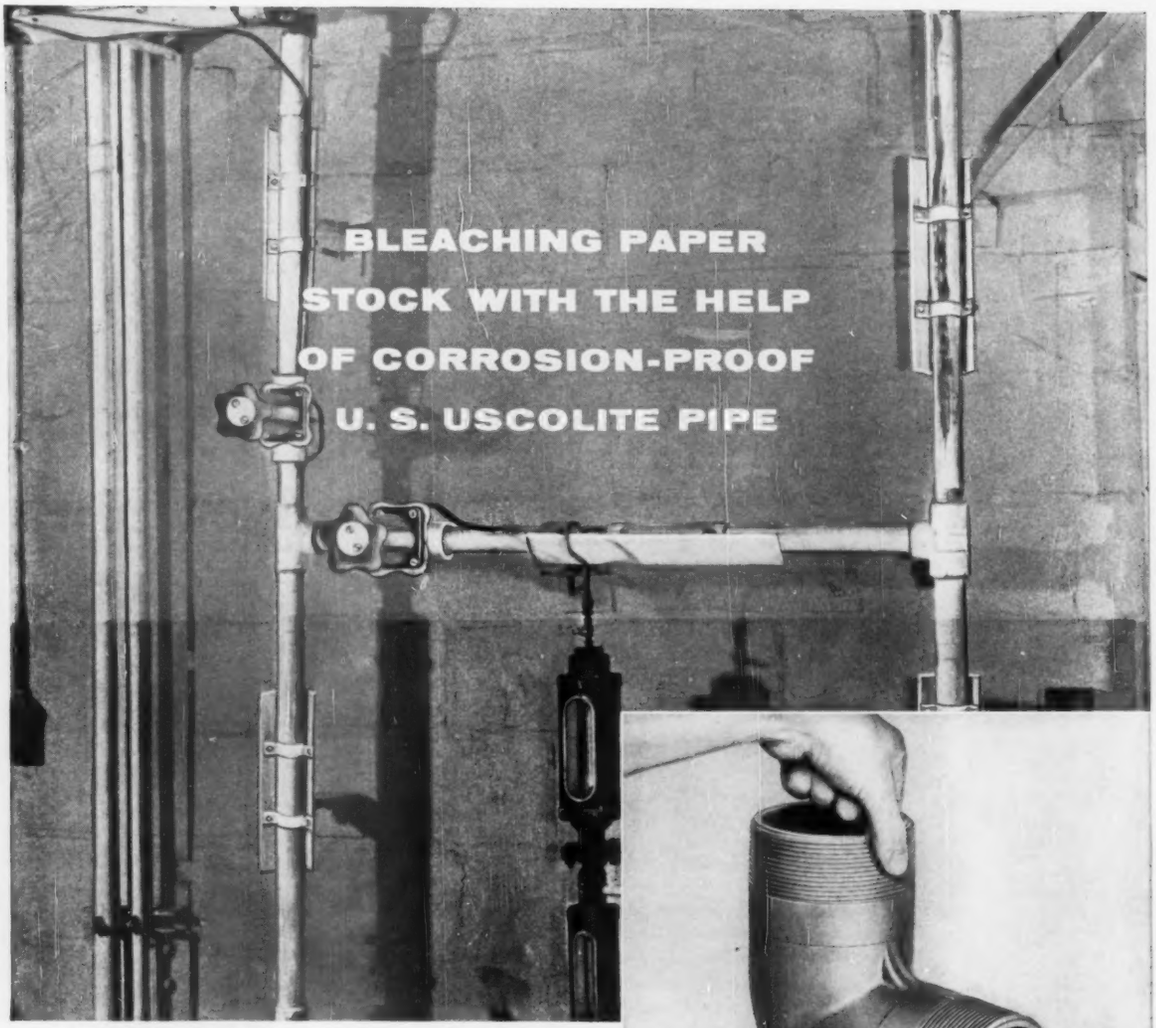


MONTGOMERY, ALABAMA
IN PRODUCTION SINCE OCTOBER, 1954

Appleton Wires are Good Wires

Appleton Wire Works, Inc.
GENERAL OFFICES: APPLETON, WISCONSIN

INTERNATIONAL WIRE WORKS, MENASHA, WISCONSIN . . . AN AFFILIATED COMPANY SINCE JANUARY, 1955



Milk of lime rotameter, used in the control of the pH of the stock in a double-shaft mixer. The piping is U. S. Uscolite with Uscolite (Hills-McCanna) valves.

The paper mill, located in Pennsylvania, selected U. S. Uscolite® plastic pipe because it's immune to the corrosive chemicals used in the bleaching process, and requires *no upkeep*. The piping previously used just couldn't stand the gaff.

Made by United States Rubber Company, Uscolite is an extremely tough but lightweight thermoplastic pipe. It imparts no odor, taste or discoloration. It is threaded and assembled with ordinary piping tools—*without* special preparation. Uscolite is in use in thousands of installations in every industry where constant control of chemicals, acids or corrosion is a problem.

Uscolite pipe and fittings are made in the broadest and largest line of stock sizes on the market. Sizes run from ½" to 6".

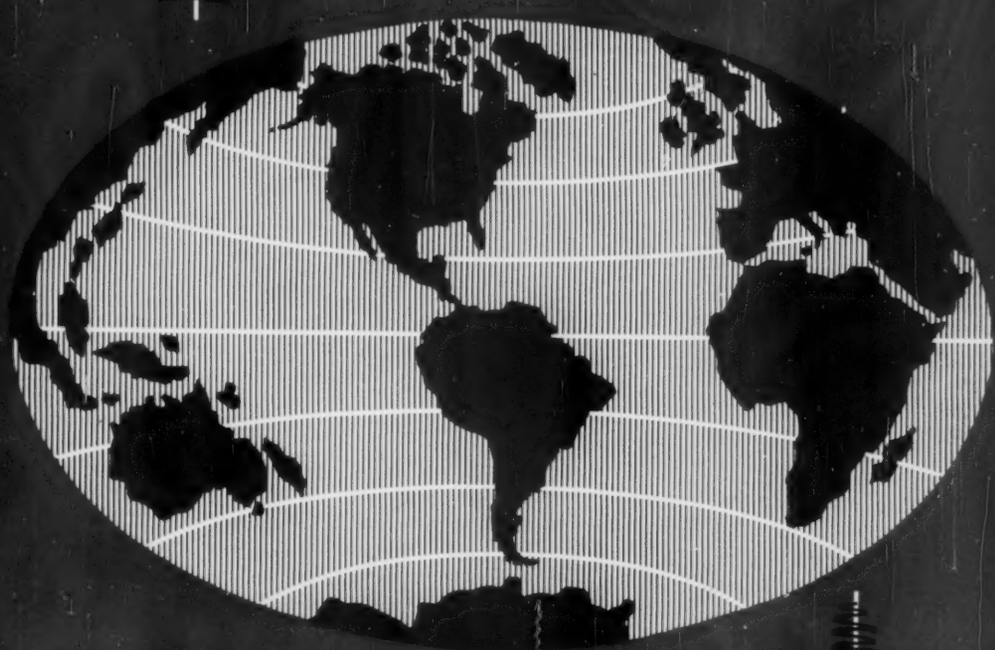
For replacement or completely new piping, get in touch with any of our selected distributors or any of the 27 "U.S." District Sales Offices or write us at Rockefeller Center, New York 20, N. Y. Immediate delivery of standard sizes and threaded fittings. The Hills-McCanna Uscolite valve is available for your piping assembly.

US RUBBER

Mechanical Goods Division

United States Rubber

WOOD PULP
PAPER



Offices and representatives in 60 cities in the United States, Europe, Latin America, Africa, and Asia

BULKLEY DUNTON & CO., INC.
BULKLEY DUNTON PULP CORP., INC.
BULKLEY DUNTON PULP CO., LTD.—LONDON
BULKLEY DUNTON PAPER CO., S.A.
BULKLEY DUNTON CELLULOSE EXPORTS, INC.
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BULKLEY DUNTON PROCESSES, INC.
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ORGANIZATION

295 MADISON AVENUE, NEW YORK 17, N. Y.

DOW

You Can See Why

SARAN LINED PIPE

CUTS CORROSION COSTS

Corrosion resistant Saran Pipe swaged into steel is your answer to downtime losses.

Saran lined pipe, fittings and valves are built to convey acids, alkalies and other corrosive liquids at low over-all costs. The durable inner lining eliminates shutdowns due to corrosion and forms snug, tight-fitting joints that prevent leakage.

Saran lined pipes, fittings, and valves are easily and inexpensively installed. They are cut and threaded in the field with any standard pipe fitter's tools. Because of saran lined pipe's rigidity, even long spans require a minimum of support.

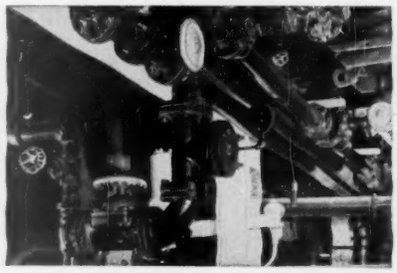
If your operation requires the conveying of corrosive liquids, and if downtime losses are troubling you, investigate saran lined pipe, fittings, and valves today. For further information, contact the Saran Lined Pipe Company, 2415 Burdette Avenue, Ferndale 20, Mich. Dept. 526E-4.

RELATED SARAN PRODUCTS—Saran rubber tank lining • Saran rubber molding stock • Saran tubing and fittings • Saran pipe and fittings.

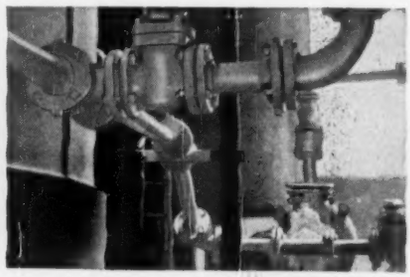
SOME OF THE MANY INSTALLATIONS USING

SARAN LINED STEEL PIPE

Saran Lined Pipe is Manufactured by
The Dow Chemical Company
Midland, Michigan

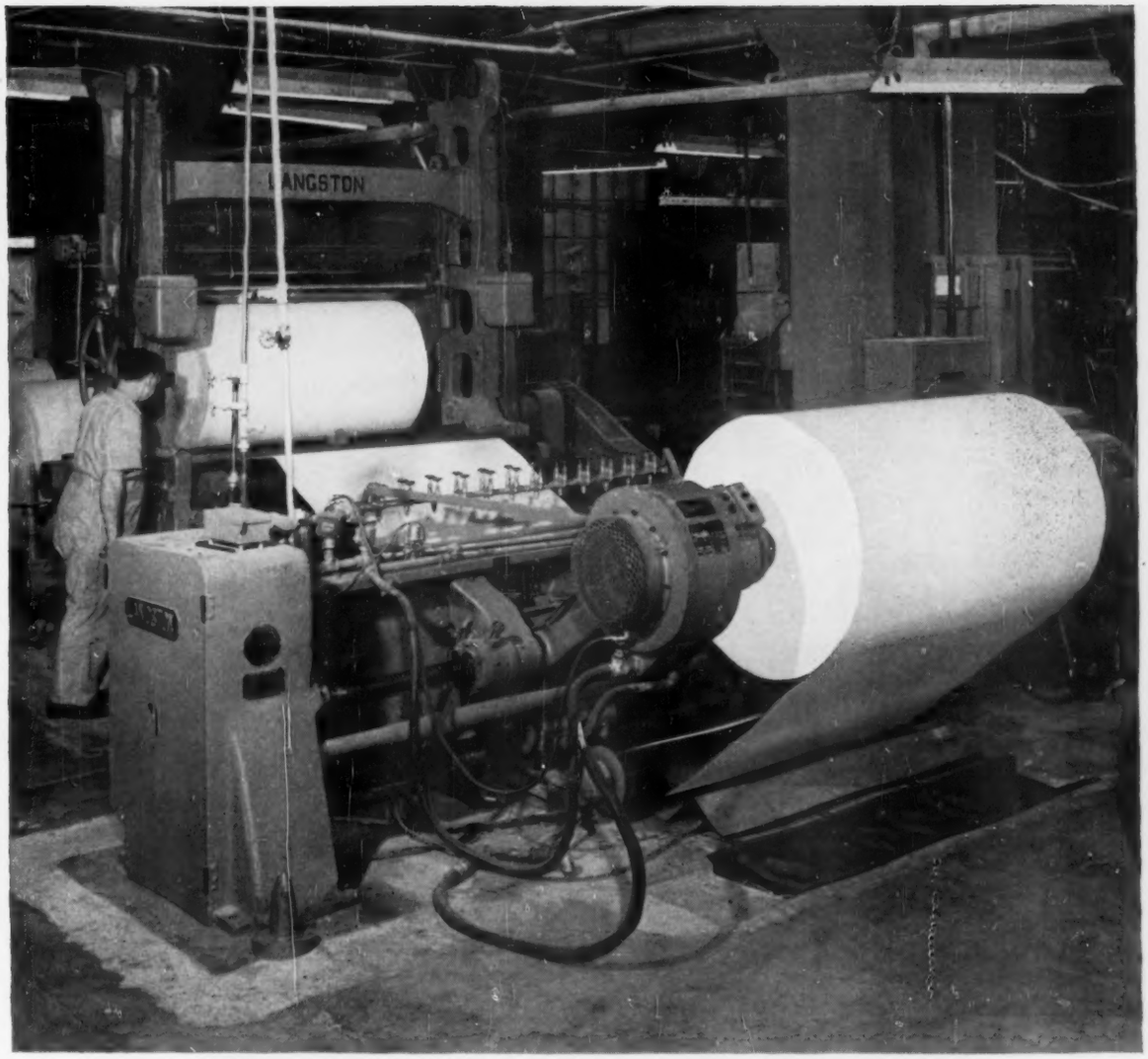


A large chemical company uses this installation to convey demineralized water. It has a perfect record of keeping the water free of contamination for five years!



Saran lined pipe used for conveying hydrochloric acid at temperatures from 20° to 90°C., has had no unscheduled interruptions due to corrosion for over two years!

you can depend on DOW PLASTICS DOW



Efficiency in action. Paper unwinds from Langston Single Position Shaftless Roll Stand in foreground; passes under stand; is slit and rewound on Langston Slitter & Winder Type "BA."

Langston Winder & Shaftless Stand

save paper cup company $9000 a year

To make paper cups and lids, Dixie Cup Co. starts with an efficient combination of Langston machines.

Paper stock in rolls 72 in. wide and weighing upwards of 2 tons are picked up from the floor conveyor by the Langston Type "BA" Shaftless Roll Stand and fed into the winder. This completely power-operated stand, equipped with constant tension brakes, is operated by one man. It ends forever the time and drudgery of old-fashioned roll shafting and the need for an overhead crane. Savings add up to $9000 annually.

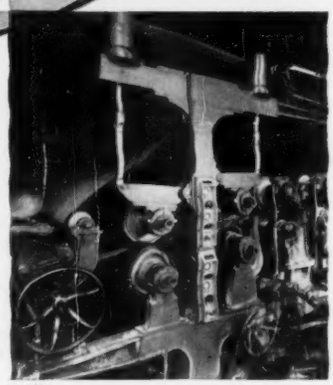
The Langston Type "BA" Slitter & Winder runs at a speed of 1750 feet per minute—500 fpm faster than the former installation. Shear-cut Langston slitters make such clean edges that later trimming is eliminated. This feature, plus the automatic tension control provided by the Langston Roll Stand, has helped cut paper waste at Dixie Cup by 50%. Clean cutting also keeps the plant cleaner by holding paper dust to a minimum.

Langston Slitters & Winders are available in sizes up to 196 in. wide and in speed ratings to 3500 fpm and beyond. Shaftless roll stands can be ordered to match. If you aren't enjoying the greater efficiency these machines make possible, write for full details. SAMUEL M. LANGSTON CO., 6th & Jefferson Sts., Camden 4, N.J.

LANGSTON Leadership...by design

This Manchester Primary Press Gives You...

1956 QUALITY CONTROL



Every board maker knows that quality control starts in the wet end. A Manchester Primary Press with hydraulic drive gives you this control.

You get more uniform nip loading with better control. Your operators can see at a glance just what the loading is. Loading is done more easily. And you get longer roll life between grindings. Other advantages are uniform felt tension and independent draw adjustments.

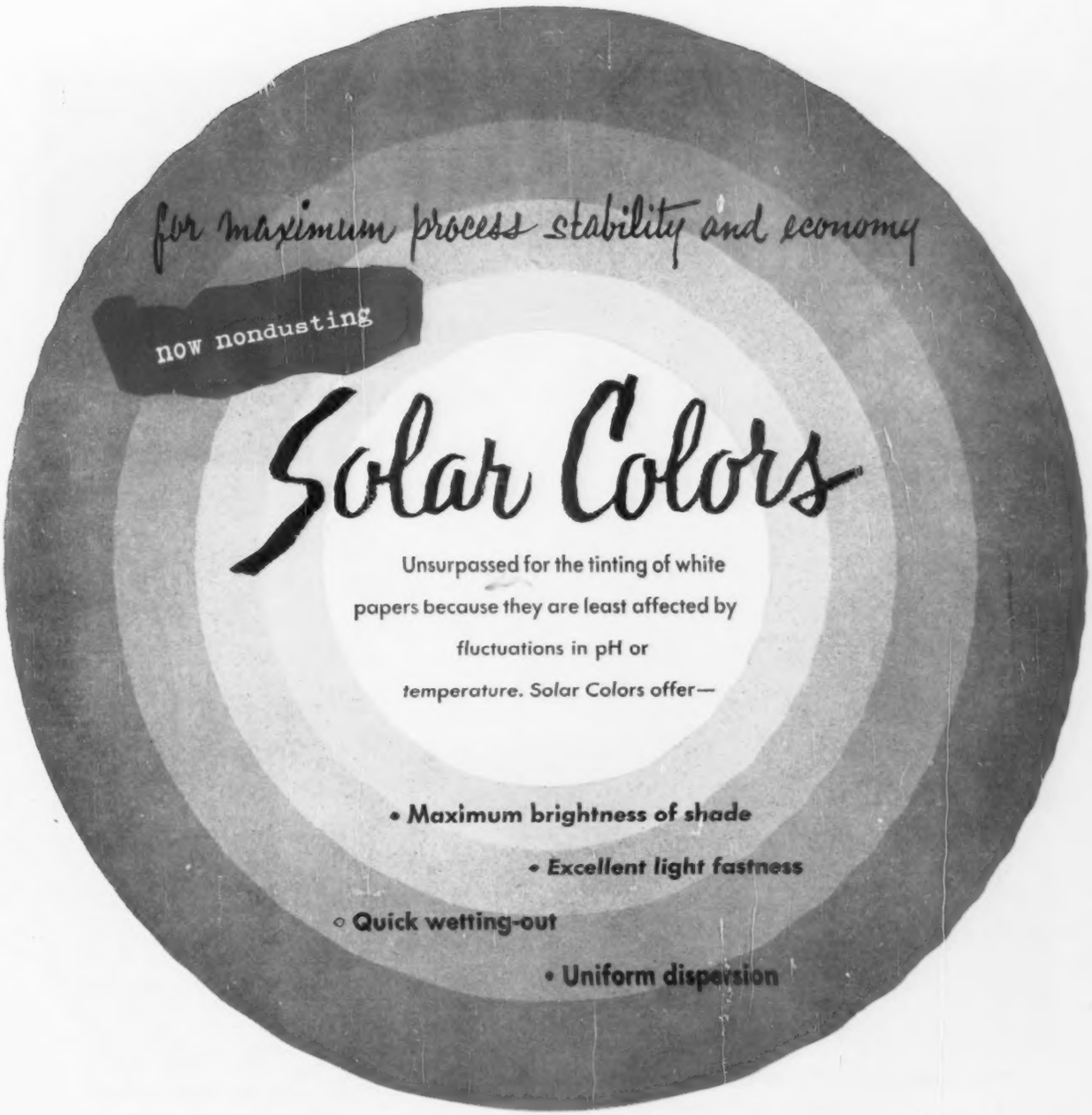
You can make top-quality board over a wide range of caliper and type of board run. Here is an important tool to meet your customers' specifications. Write for more information about your needs.

OTHER PRODUCTS: Suction Presses • Size Presses • Pope Type Reels Paper Machine Drives • Rubber-Covered Drilled Suction Press Rolls Drilled Suction Drum Rolls • Drilled Suction Couch Rolls • Cylinder Molds Smoothing Presses • Complete Fourdriniers • Winders and Slitters •

THE MANCHESTER MACHINE COMPANY

MIDDLETOWN, OHIO

SPECIALISTS IN DESIGNING AND BUILDING PAPER MILL MACHINERY


for maximum process stability and economy
now nondusting
Solar Colors
Unsurpassed for the tinting of white papers because they are least affected by fluctuations in pH or temperature. Solar Colors offer—
• Maximum brightness of shade
• Excellent light fastness
• Quick wetting-out
• Uniform dispersion

Solar Colors are now being delivered in a new nondusting, noncaking form *which completely eliminates handling difficulties.*

Solar Blues and Violets *are available in a full range of shades which will produce* tints of any possible hue for the brightest whites or coated papers with *unexcelled color performance.*

All these advantages *are available at no extra cost.*

Write for samples and technical information on the role of Solar Colors for *tinting white papers.*

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gdc gaf **GENERAL DYESTUFF COMPANY**

A SALES DIVISION OF GENERAL ANILINE & FILM CORPORATION

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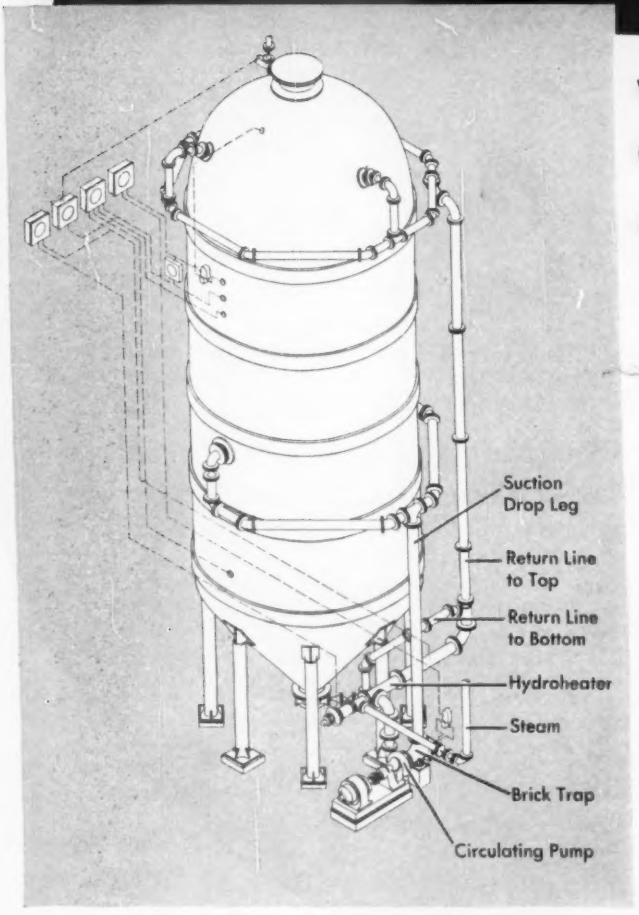
Why You'll Get a *Greater Yield* of Higher-Quality, More-Uniform Pulp

with the Chemipulp-KC Circulating System and Chip Distributor

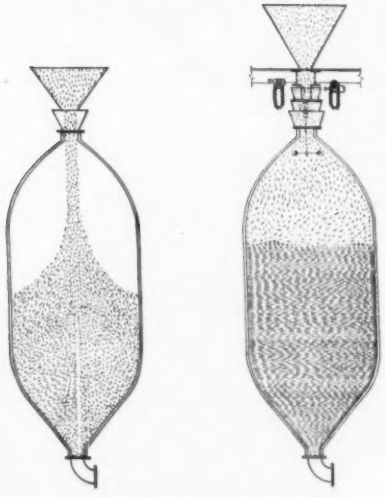


The Chemipulp-KC Circulating System

The drawing shows how the hot liquor enters the digester at both top and bottom and leaves at several points at the center. This, combined with uniform chip distribution, results in uniform cooking temperature throughout the digester.

Consequently, you don't have to overcook to take care of cool spots in the digester. Very little of the hemicelluloses are dissolved and lost. The cooking time is shortened. You get stronger, uniform pulp.

In actual operation, this system has increased the Mullen from 112 to 150 and the fold from 800 to 4,500 in addition to increasing plant capacity up to 45%. Write for complete information.



Ordinary filling methods, illustrated above at left, result in a conical chip pile with chips positioned so as to concentrate the flow of liquor along the central axis of the pile. As shown at the right, metering plate and distributing bats of the Chemipulp-KC Chip Distributor deliver the chips uniformly over the area of the digester. The chips lie in a horizontal plane which permits the Chemipulp-KC Circulating System to bring the entire contents of the digester to uniform temperature. This Distributor can increase the chip charge from 25% to 50% with uniform liquor circulation throughout the entire mass.

Chemipulp Process Inc.

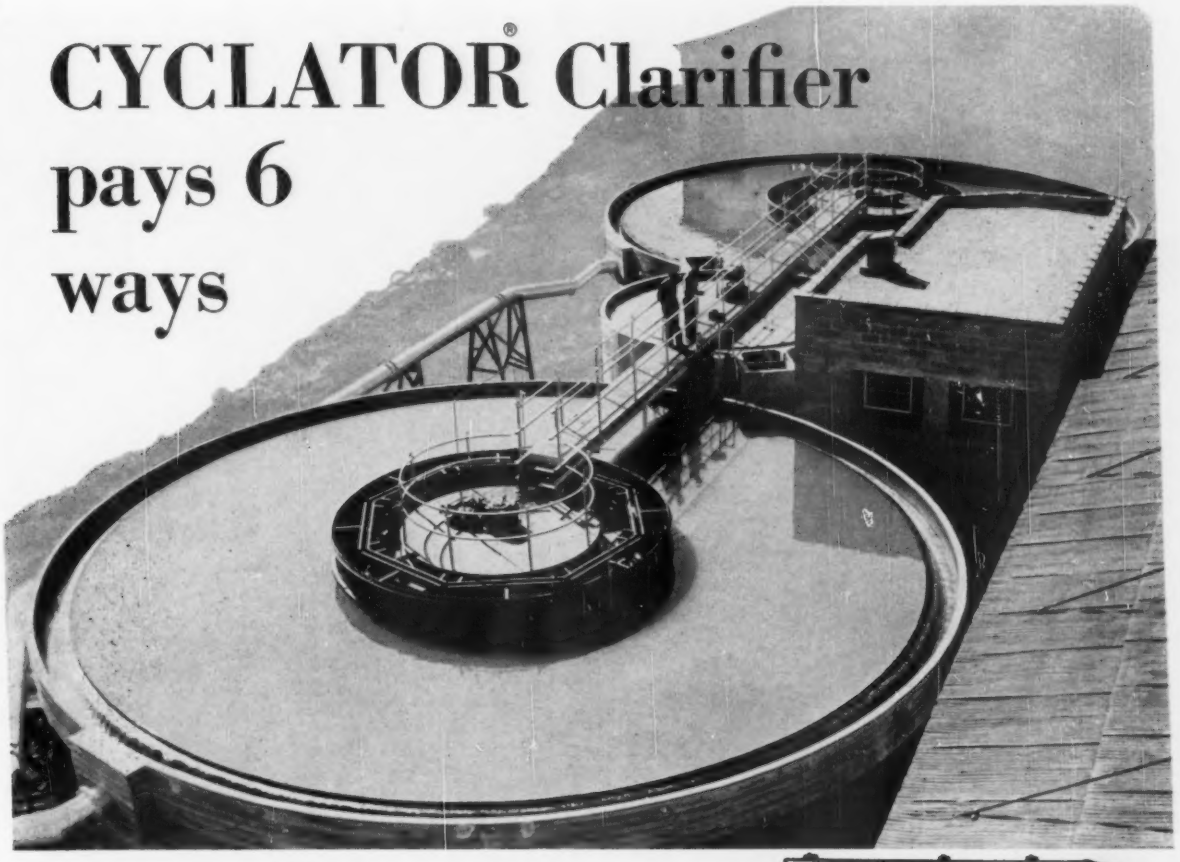
Woolworth Building, Watertown, N. Y.

Associated with Chemipulp Process Ltd.
403 Crescent Bldg. Montreal

West Coast

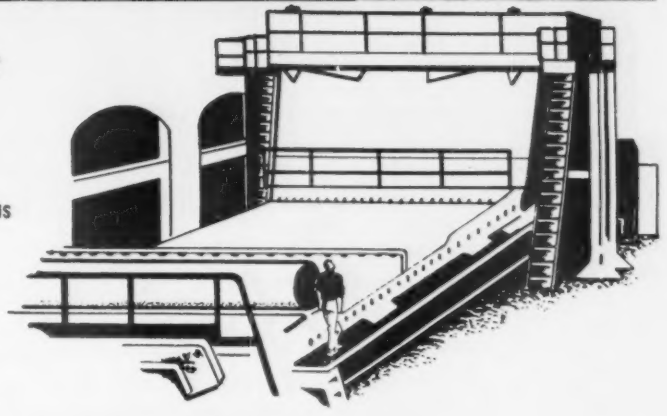
A. H. Lundberg, Orpheum Bldg., Seattle
Lundberg-Ahlen Equipment Ltd., 146 E. Broadway, Vancouver

CYCLATOR® Clarifier pays 6 ways



...in clarification of white water and paper plant effluents.

1. Earns dividends in value of water returned to process and/or in fibre recovery.
2. Combines chemical and mechanical methods plus solids recirculation in a single unit.
3. Eliminates separate mixing, coagulating and settling basins.
4. Saves valuable space.
5. Handles shock loads efficiently.
6. Permits quick startups after shutdowns.



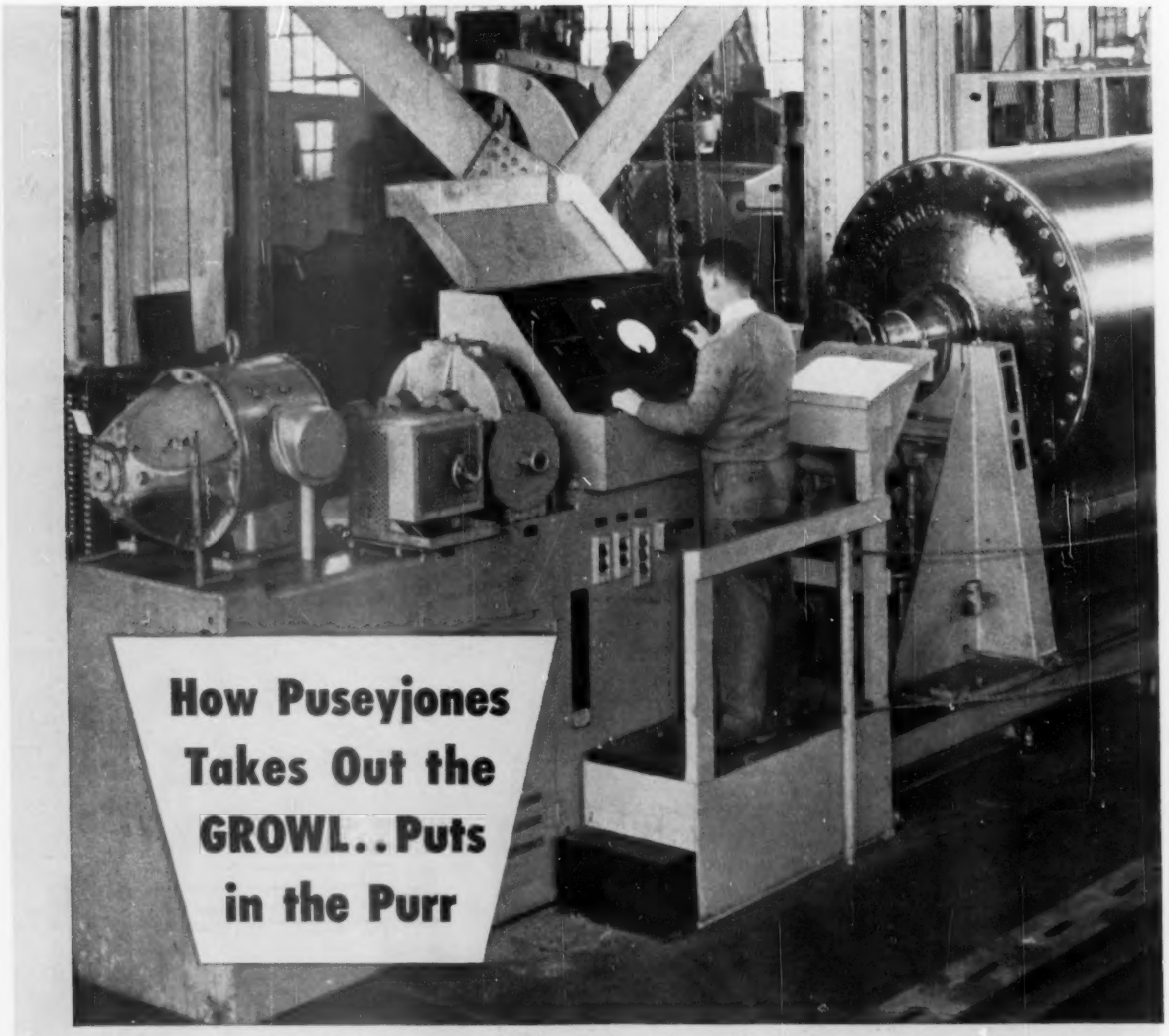
These and numerous other important advantages will help you solve your pollution problems efficiently—perhaps even at a profit! Just compare the CYCLATOR Clarifier with ordinary equipment. Its superiority will be immediately obvious. The famous INFILCO line of water and waste treating equipment features other important units for paper mill operators. Included are the ACCELATOR® Clarifier for water treating, the SEDIFLOTOR (trade-mark) Saveall for fibre and water recovery, anthracite filters, for polishing green liquor and white liquor, and other equipment of finest design and manufacture.

Our engineers are at your service, together with the knowledge gained from many years of specialized experience in pulp and paper fields. Whether you are modernizing an old plant or planning a new one, write for complete information today.

INFILCO

The one company offering engineered equipment for all types of water and waste processing—coagulation, precipitation, sedimentation, flotation, filtration, ion exchange and biological treatment.

INFILCO INC. 920 South Campbell Ave., Tucson, Arizona
Offices in principal cities in North America



A Puseyjones engineer calibrates a paper roll on the fast and accurate Gisholt Dynetric Balancing Machine.

Like every machine that Puseyjones builds, the new Fourdrinier now being built for Southland Paper Mills will be in dynamic balance . . . vibration-free at every speed. At the Puseyjones plant, every rotating part, large or small, is being checked out on this Gisholt Dynetric Balancing Machine . . . electronically balanced to the closest tolerances.

Speeds and tonnages go up, when vibration goes out. At Puseyjones, scientific, precision balancing takes out the growl, puts in the purr. In a matter of seconds, unbalance vibration is picked up, amplified, and recorded. Like a doctor reading an electrocardiogram, Puseyjones engineers read the electronic tracing, compute the amount of unbalance, and pinpoint its location. Armed with this data, adjustments to eliminate vibration are easy.

Precise balancing of rotating parts in every Puseyjones Machine is standard operating procedure . . . just one of many extra safeguards that are yours when you call on Puseyjones. Let us give you full details.

THE PUSEY AND JONES CORPORATION
Established 1848 : : Builders of Paper-Making Machinery
Fabricators and Welders of all classes of Steel and Alloy Products
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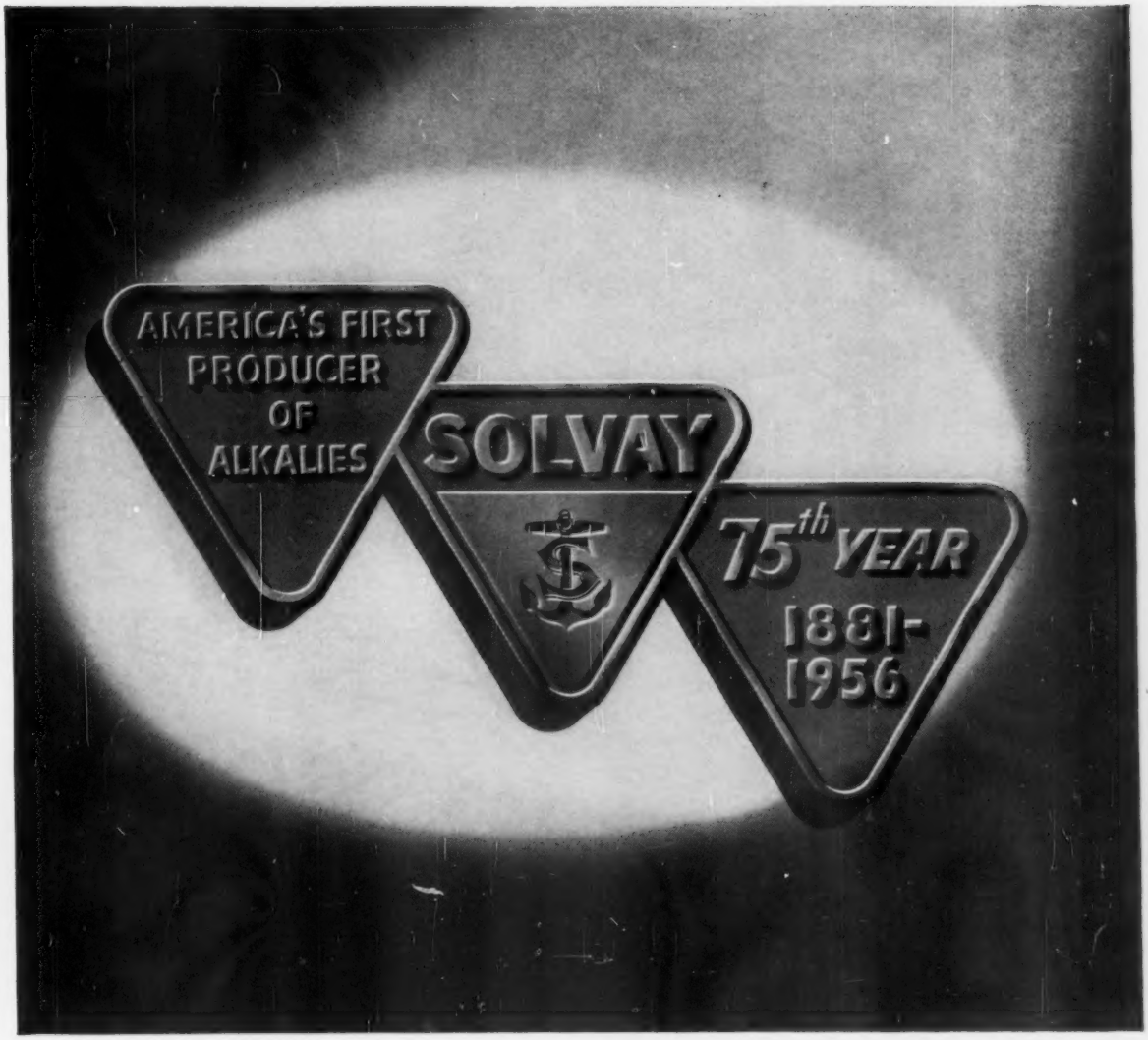
THE SIGN OF TRADE MARK SUPERIOR QUALITY



SOLVAY'S 75th YEAR

As America's pioneer producer of alkalies, we are proud of the contributions Solvay has made to the dynamic growth of American Industry during the past 75 years.

It is natural to look at our 75th year as a mark of achievement.

Be assured that in the years of industrial development ahead Solvay products and service will continue to set the pace of leadership.

SOLVAY PROCESS DIVISION • ALLIED CHEMICAL & DYE CORPORATION • 61 BROADWAY, NEW YORK 6, N.Y.

CURLS ARE FOR GIRLS... NOT FOR PAPER!

Brown Company's SOLKA SPECIAL DUR ALBA specification wood pulp prevents curl in your fine paper by means of inherent dimensional stability.

Dur Alba is the pure white fibre that guarantees your internal paper structure and appearance.

This crafted wood pulp for fine-paper craftsmen is engineered to give all-the-way-through control for printing, reproduction, offset, letterhead, business, or any other quality paper where curling is a problem.

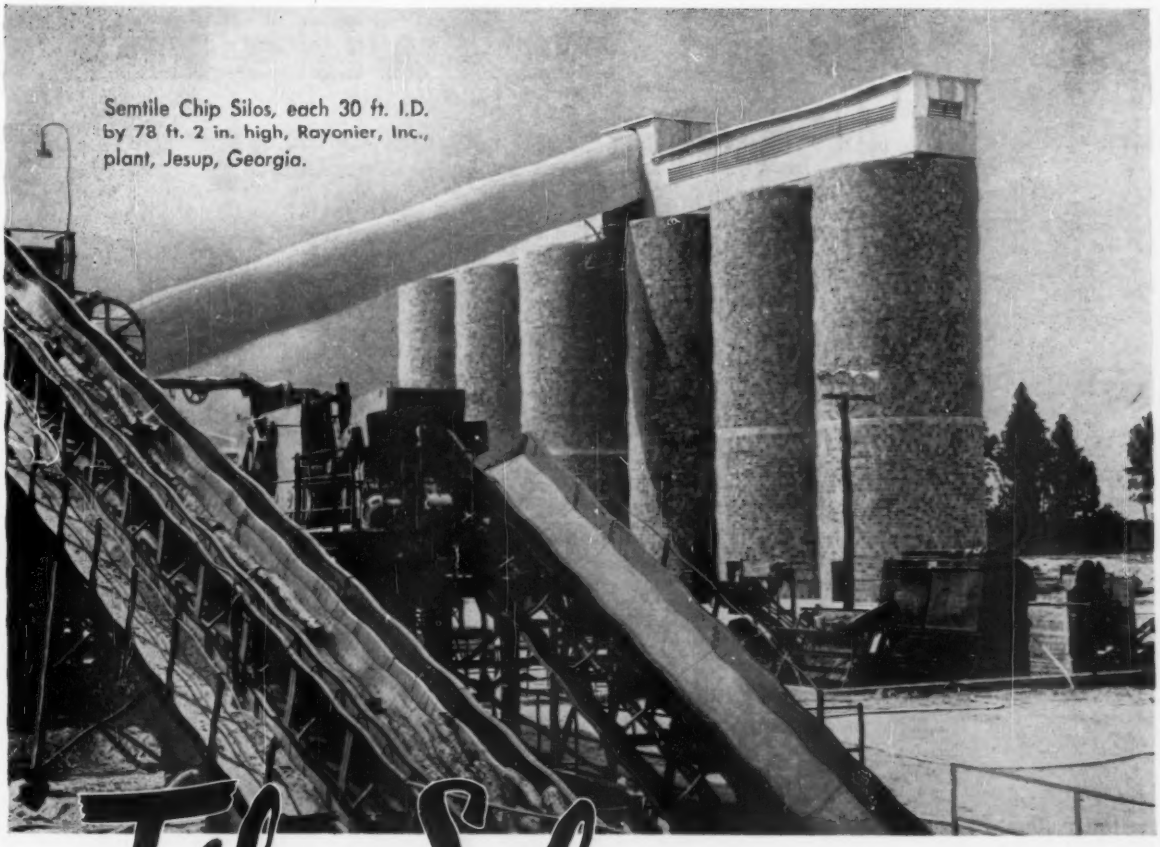
It is another example of Brown Company pioneering in the wood pulp industry to bring you the finest possible pulps for your specific needs. Brown Company's fifty years of wood research, unlimited timberland resources, advanced manufacturing methods, and skilled technicians, are your assurance of pulps to make you proud of your products.

It will pay you to investigate SPECIAL DUR ALBA for curl control. Write our Technical Service Division, Dept. PC-1, at Boston.

BROWN COMPANY, Berlin, New Hampshire

General Sales Office:
150 Causeway Street, Boston 14, Mass.

SOLKA PULPS • SOLKA-FLOC • NIBROC PAPERS
NIBROC TOWELS • NIBROC KOWTOWLS • NIBROC TOILET TISSUE • BERMICO SEWER PIPE AND CONDUIT • ONCO INSOLES • CHEMICALS



Semtile Chip Silos, each 30 ft. I.D. by 78 ft. 2 in. high, Rayonier, Inc., plant, Jesup, Georgia.

Tile Silos

for Storage of Dry Materials

These enormous chip silos, engineered and erected by Stebbins, are steel-reinforced concrete faced inside and outside with vitrified tile. No forms were required—a Stebbins construction method that results in substantial savings.

If you require facilities for storing materials—dry or wet—in large or small quantities—it will pay you to get Stebbins' recommendation. Or if you need corrosion-resistant process vessels, Stebbins' unequalled experience and facilities for the application of linings and the construction of tile can be extremely valuable to you.

Write for Bulletin A-153

SINCE 1884
Specialists in
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Installation
and Servicing
of Linings and
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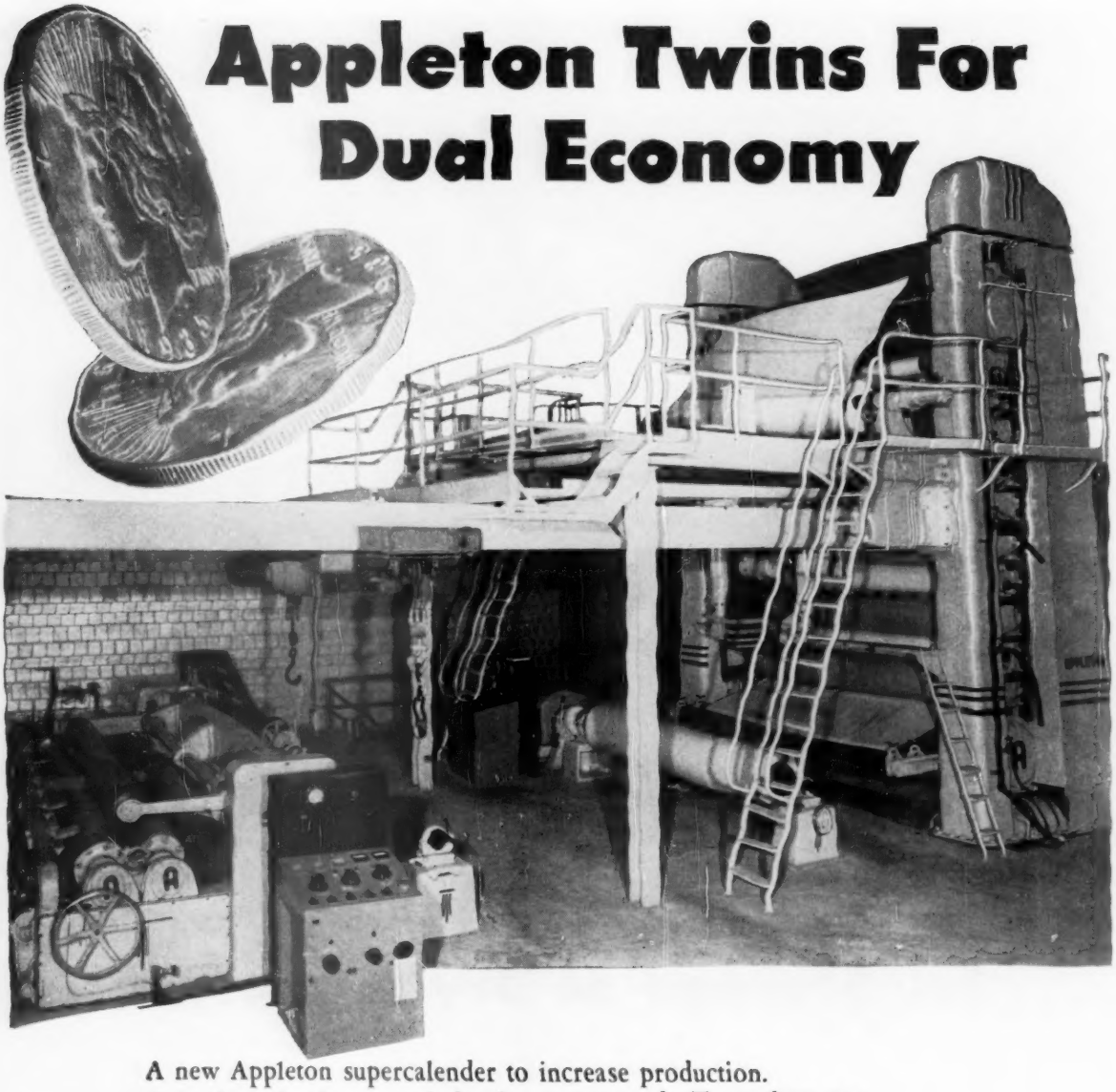
CANADIAN STEBBINS ENGR. & MFG. CO., LTD. - CASTLE BLDG., MONTREAL, CANADA

Appleton Twins For Dual Economy



A new Appleton supercalender to increase production.
A modern Appleton rewinder for more speed. Team them up for *twice* the efficiency to cope with today's higher costs.

Appleton supercalender illustrated: 150″ 12 roll, has shaftless unwind arrangement and automatic roll handling from elevated storage platform. Operates at 1800 f.p.m.

Appleton rewinder illustrated: 150″ 2 drum, also ruggedly built, with low center of gravity to assure vibration-free operation. Operates at 3500 f.p.m.

APPLETON MACHINE COMPANY
APPLETON WISCONSIN

CUSTOM BUILDERS OF PULP, PAPER & TEXTILE MACHINERY · CALENDERS · FINISHING ROLLS · REWINDERS · SCREENS · DECKERS

If you use WAX···

DAIRY CARTONS

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···you'll want to use A-C* Polyethylene

How long have you looked for a way to get the outstanding values of polyethylene with the convenience of wax? And how many types of "poly" did you try before giving up?

Well, consider polyethylene again. But this time try *low-molecular-weight* A-C POLYETHYLENE —regular or emulsifiable!

Here's why:

- ***handles at temperatures of wax in conventional equipment.***
- **gives a high gloss, enhances and adds richness to colors, improves scuff and abrasion resistance.**
- **is completely compatible with all waxes and actually *fortifies all your wax formulations.***
- **permits close control of coating weight.**
- **easier to use, easier to handle. You can use higher percentages of A-C POLYETHYLENE on standard coating equipment.**

*Trade Mark

Don't delay! Commercial quantities are available for your immediate evaluation. Write for free samples today or return the handy coupon with your business letterhead.

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☐ Please send me technical literature on A-C POLYETHYLENE.
☐ Please send me free samples of A-C POLYETHYLENE.
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Company _____

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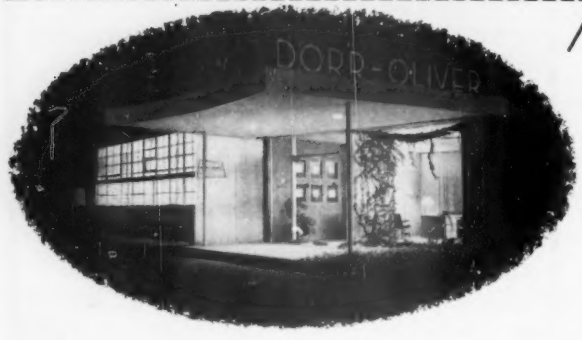


1955 has been a year of change, consolidation and progress in both a corporate and a technical sense for Dorr-Oliver. Just a year ago we were deeply involved in the complexities of merger and, as we near the end of this first year of combined operations, a review has more than usual significance.

Perhaps most notable has been the remarkable integration of our combined staff and its growing effectiveness in every area of operation. With this integration came important organizational change — the creation of new groups to handle technical problems more effectively and to explore new opportunities. With it also has come the strengthening of sales staff in some areas and the opening of new offices in others, designed to provide better service to our clients and customers.

Of the utmost importance in this rapidly developing picture is the welcoming of Dorr-Oliver-Long Limited as a full member of the worldwide D-O family. The natural result of a close and friendly relationship dating back to 1911, the consolidation of our Canadian operations with those of E. Long Limited of Orillia on January 1, 1956, will unquestionably strengthen our overall operations.

PULP AND PAPER — In 1955, field testing and subsequent commercial acceptance of the Webwelder for splicing corrugating medium and other heavy grades of paper was among our most significant projects. Contributing heavily to our volume of business were new or expanded Recausticizing Systems in the Pacific Northwest, Southeast, Canada, India, Sweden, Finland, Mexico and Chile. Next year the Horizontal Filter, already used for washing cotton linters, will be applied to pulp washing in a Southern mill.

INDUSTRIAL WASTES — Also in the pulp and paper industry, the largest biological kraft mill waste treatment plant in the world went into operation at West Virginia Pulp and Paper Company's Covington, Virginia, mill. And on the West Coast the most comprehensive treatment plant ever designed is now on stream handling wastes from an oil refinery. Both are D-O equipped. Orders were placed for waste treatment units to serve a midwest cannery and a large Eastern photographic equipment manufacturer.

PETROLEUM — The newly introduced D-Sander has proved to be extremely successful in removing sand from rotary drilling mud and has been widely utilized in the Gulf Coast oil fields. Fabrication of the longest petroleum filters ever constructed — six 10′ x 22′3″ Olivers for dewaxing — was completed at our Hazleton shops. Research and development continued on a new and unusual type of hydrocarbon purification unit, the applications of which appear almost boundless in the petroleum industry.

URANIUM — During the year a large D-O equipped Canadian uranium mill went into operation and orders were received for processing equipment to be used at six other United States and Canadian mills now under

construction or being expanded. Facilities at our Westport laboratories have been enlarged to handle all types of uranium extraction work and to process small quantities of material from ore through "yellow cake". In a closely related project — the production of rare earths — D-O equipment will be widely utilized in a plant under construction.

SUGAR — As a result of three years of development we have introduced the RapiDorr Cane Juice Clarifier designed with 30% less volume than conventional units. A number of these machines will be in operation in the coming 1956 campaigns. Our associates in Italy have sold two Continuous Carbonation Systems for beet sugar processing on the Italian peninsula and mills in India will clarify cane juice in units manufactured by D-O GmbH in Wiesbaden.

SANITATION — On the new Ohio Turnpike, wastes from eight service areas will be treated in D-O equipped plants. On a much larger scale, London, England will utilize sixteen Dorr Digesters in the expansion of their treatment facilities and in India two new sewage plants will be completely D-O equipped. At Milwaukee, Wisconsin, four sewage sludge filters will replace the original Olivers installed some 33 years ago and next year at Baltimore, Maryland the largest sanitary filters ever constructed — two 14′ x 18′ units — will go into operation.

The Densludge Process of prethickening sludge is now operating at two full-scale Biofiltration plants in the Southwest with general improvement in overall plant performance an unexpected result of its use. Tests have been virtually completed on a new Degritting Clarifier to be placed on the market in the near future. The Refuse Treator, which was developed in Holland and which may soon become an integral part of the domestic D-O line, gives the sanitary engineer another tool for the accomplishment of his ultimate goal.

RESEARCH AND DEVELOPMENT — Fundamental research has continued on the unit operations basic to D-O equipment. While such work is necessarily of a long range nature, increased fundamental knowledge has already led to marked advances in the field of clarification.

In addition to improvement of basic units, the company is constantly investigating new lines which can be profitably integrated with our other business. Current projects include an investigation to determine the manner in which D-O can make further contributions to the Atomic Energy Program and development of an ingenious Dutch device for fine screening.

COPPER — Half a world apart — in Israel and Arizona — two D-O designed copper ore dressing plants, one a full-scale operation and the other a pilot plant, are now under construction. In the United States, three large concentrators in the Southwest ordered equipment for plant expansions and in the Belgian Congo the first FluoSolids System to roast copper concentrates prior to electrolytic recovery went into operation.

FERTILIZER — Missouri Farmers Association's new plant, proving ground for the Diammonium Phosphate Process, attained design capacity in record time at Joplin, Missouri. Utilization of this new process makes commercial production of unusually high analysis fertilizer from concentrated phosphoric acid possible for the first time. In Japan, two more D-O designed fertilizer plants went into operation and a third was under construction in Norway.

WATER TREATMENT — In the field of water purification, Caracas, Venezuela and Kansas City, Missouri have duplicated orders of previous years for plant expansions and new facilities now under construction in both India and Turkey will employ extensive D-O equipment. First installations of the PeriFilter System, introduced two years ago, have shown marked economies of construction and unusual adaptability to small plants.

STARCH — Following the example of current practice in the Netherlands where the DorrClone was developed, five starch processing companies in other parts of the world ordered DorrClone Systems for their operations. Starch Washing Systems — each the first of its type in the various countries — will be installed in Brazil, Canada, Scotland and the United States. A fifth producer will use TM DorrClones to recover solids from starch washing filtrate in the U. S.

FLUOSOLIDS — Most significant achievement in the field of fluidization was the successful commercial demonstration of the first FluoSolids Coal Dryer. Equally adaptable to the drying of either metallurgical or steam coal, this unit will handle material as coarse as 1½″ with ease. During the year two other "firsts" were recorded — the first FluoSolids System went into operation in the Philippines and the first purchased for use in Germany. Repeat orders were received from companies in South Africa, Canada, Italy and Japan, and in the U. S. a large copper producer ordered its fourth complete System and seventh individual Reactor.

CHEMICAL — Expansion plans for alumina processing facilities in Jamaica and Germany, a potash countercurrent decantation system in New Mexico, and new brine purification and pigment plants in the U. S. all incorporated substantial amounts of Dorr-Oliver equipment in their flowsheets.

Any pride we may feel in the events and accomplishments of the year is shadowed by the sudden passing of one of our Founder-Chairmen, Edwin Letts Oliver, late in the summer just past. His mechanical genius, strength and human warmth will be deeply missed by the engineering fraternity of the world. To Dorr-Oliver, and to those of us who knew him well, his loss is irreparable.

For the future, our resources are considerable. The initial enthusiasm and resourcefulness of our staff, the promise of new developments and the strength and solidarity of our Associates in Canada and abroad — all point to a steadily increasing ability to serve and an eventful year ahead.

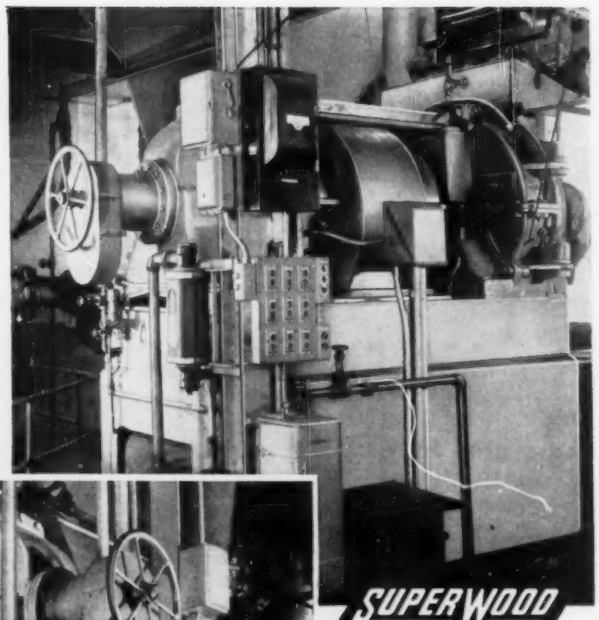
Stamford, Conn., U.S.A.

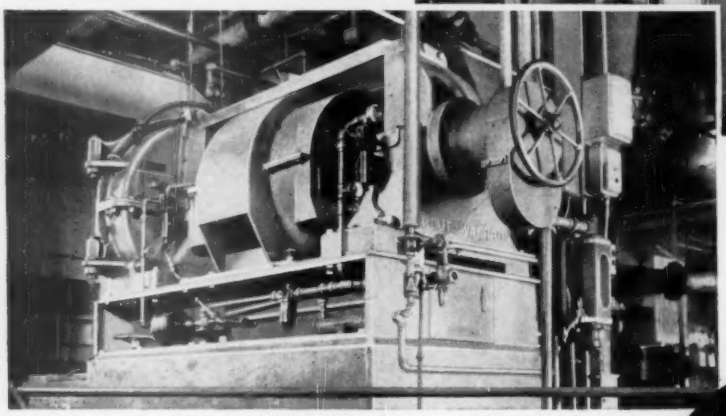
for economical **hardboard fiber preparation**

Superwood CORPORATION

chooses a

SPROUT-WALDRON 36-2 REFINER





SUPERWOOD HARD BOARD

The Sprout-Waldron 400 h.p. 36-2 Refiner at Superwood Corporation, Duluth, Minn. refines aspen Asplund fiber for SUPERWOOD hardboard. The refiner base cover has been removed to show the circulating oiling system. Above the refiner is the Uniflow Feeder built to Sprout-Waldron design and specifications. This feeder transforms a pulsating feed from the Asplund cyclone into a uniform refiner feed.

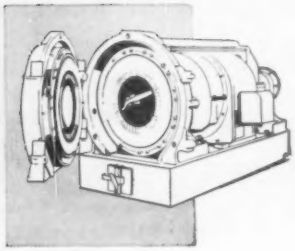
The SPROUT-WALDRON refiner is a leading producer of hardboard fiber

Single rotating disc design with peripheral control ring plus rugged construction for . . .

- **Uniform Fiber**
- **High Capacity**
- **Flexibility of Operation**
- **Low Maintenance**

For more information on hardboard fiber preparation, or any other pulping application, send for our file of technical and practical data. Write to Sprout, Waldron & Co., Inc., 32 Logan St., Muncy, Pa.

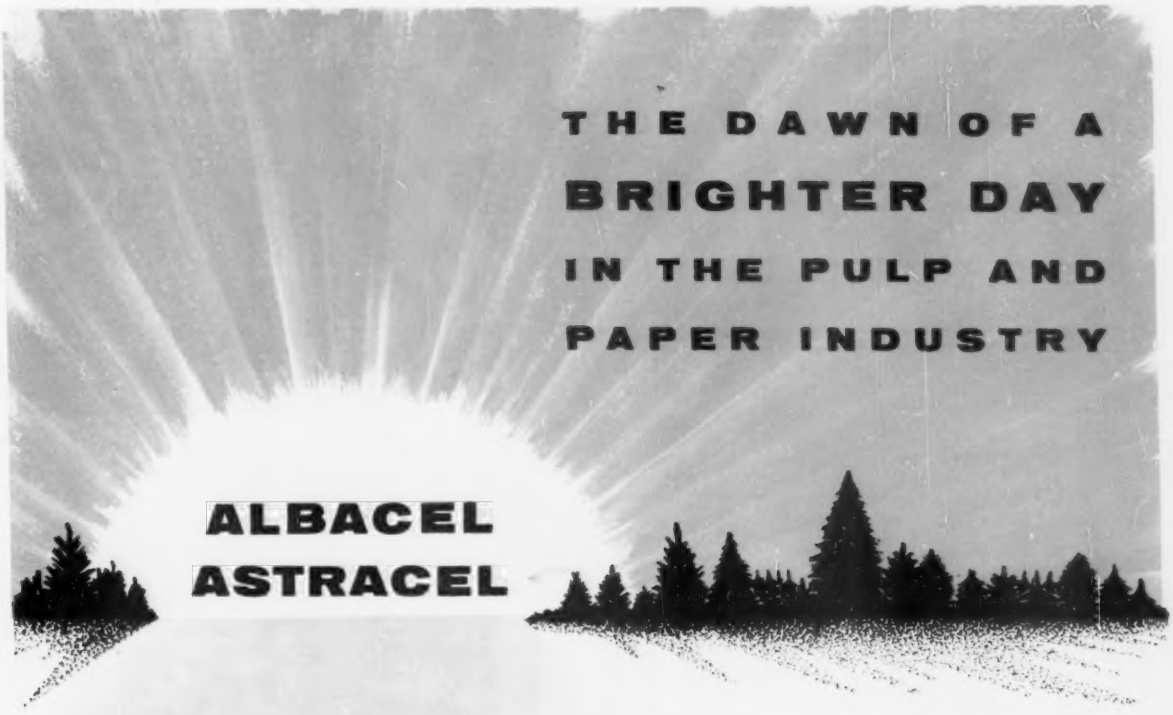
S W



for your pulping problem—

SPROUT-WALDRON

PULP REFINERS



Today's demand for brighter and whiter papers is a constant challenge to pulp mills to produce quality pulps with unusually high brightness and strength. Riegel Carolina continues to be among the leaders in meeting this challenge, taking full advantage of multiple stage chlorine dioxide treatment and other recent developments in the art of bleaching.

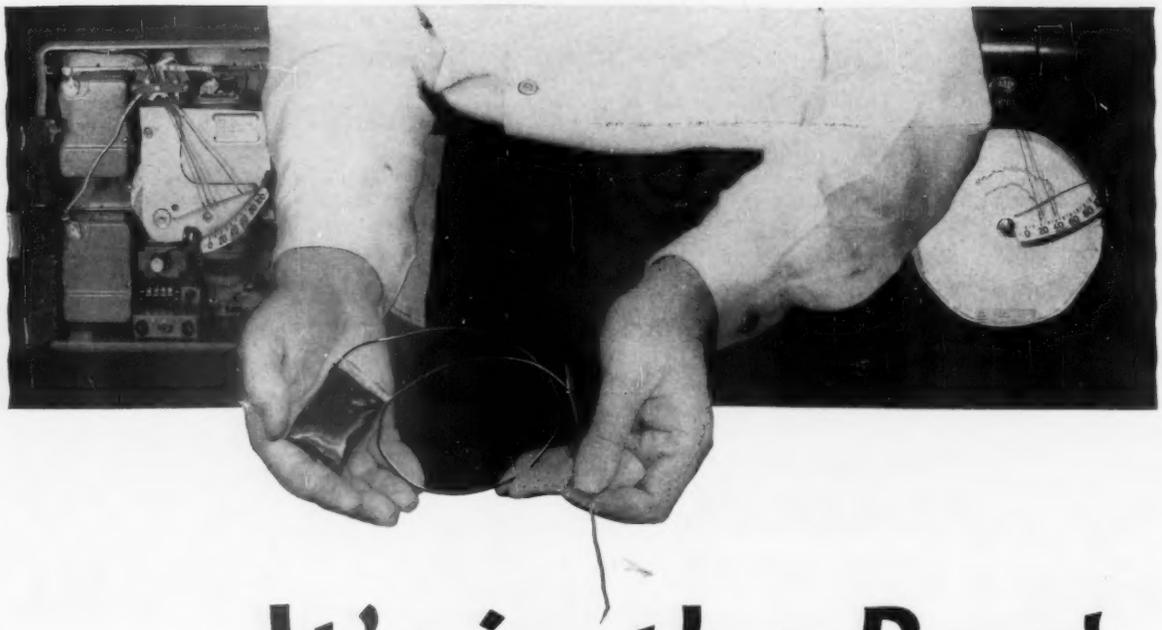
• • •

The demands of paper users become more exacting with time, but you may be sure that whatever these demands may be, you can depend on Riegel to provide pulp that will help you to meet them.

Riegel Carolina Pulps

ALBACEL • ASTRACEL

RIEGEL PAPER CORPORATION • 260 MADISON AVENUE • NEW YORK 16, N. Y.



It's in the Bag!

Fresh, Clean Ink for a Year of Trouble-free Recording

★ You won't have any messy, time-consuming re-inking of pens on the new Bailey Recorders. The entire system is white-glove clean—hermetically sealed, *non-evaporating, non-corrosive.* Gone is any chance of sludge or oxide formation. Gone are clogged pens, interrupted records, unsightly splashes.

The transparent plastic ink sacs are changed once a year—that's all. Capillary tubing carries fresh, clean ink to the pens continuously without any day-to-day attention.

This exclusive new inking system* is only one of the many time-saving, money-saving distinctive features of the new Bailey Recorder.

Ask for Product Specification E12-5.

P34-1

*Now available for the New Bailey Recorder only.

ONLY BAILEY OFFERS ALL THESE ADVANTAGES IN A SINGLE RECORDER

- Pre-calibrated plug-in receiver units
- Up to four pneumatic or electronic receivers —or two receivers and two integrators
- Any four variables on one chart—easily read and interpreted
- A full year's ink supply at one loading
- Faster ordering—from stock
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Controls for Power and Process

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Controls for
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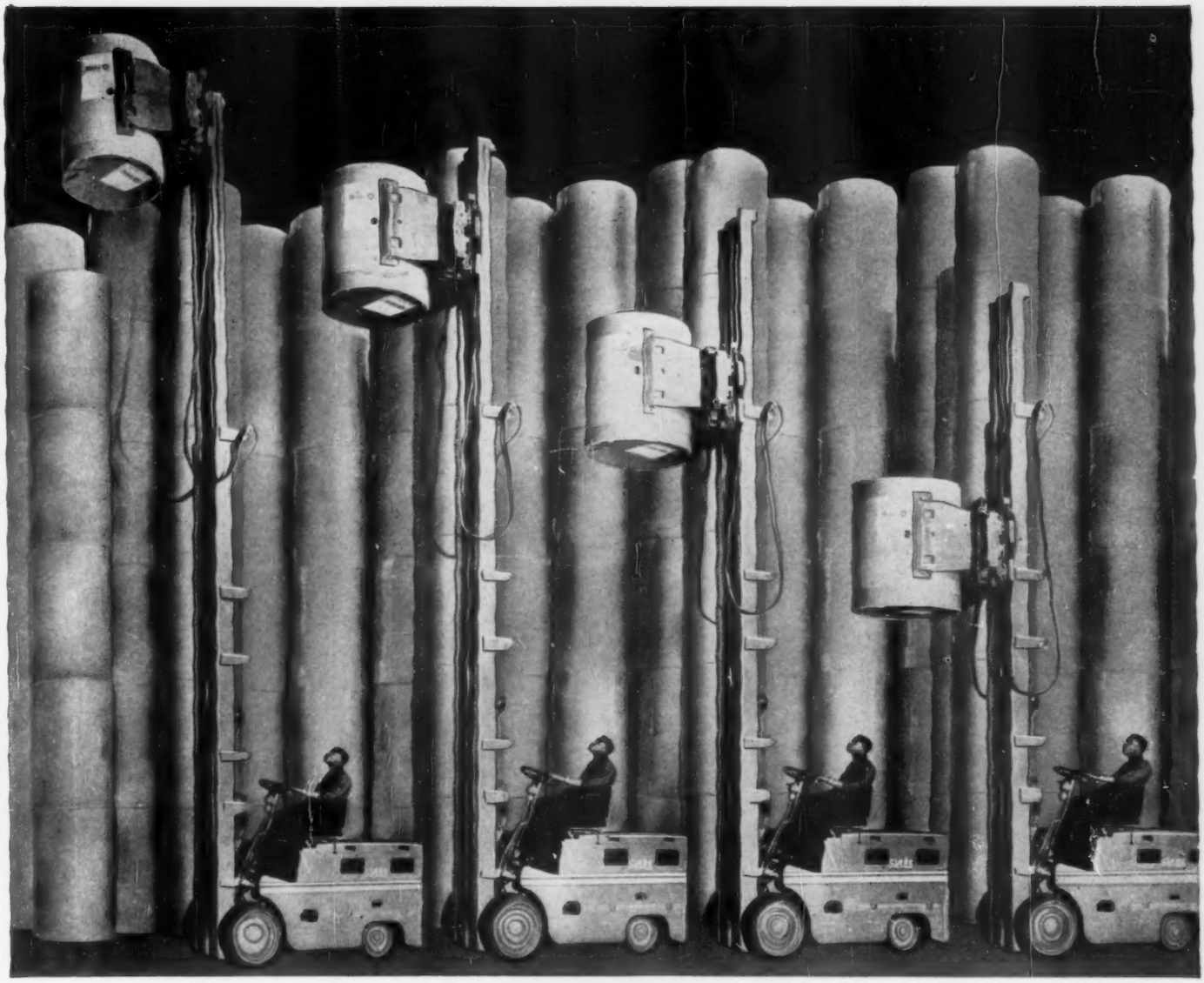

UP! UP! UP!

32 FEET HIGH!

W. F. Hall Printing Co., Chicago—A 7,000 lb. Clark electric with a phenomenal 28′ 6″ upright, stacks rolls to the rafters. Here's the results—(1) full utilization of present storage facilities (2) improved stock segregation (3) faster handling (4) stock handling with an absolute minimum of damage.

Have your local Clark dealer show you how to get the same UPward trend in your profits. Call him today . . . he's listed in the Yellow Pages under "Trucks, Industrial."

CLARK EQUIPMENT

Industrial Truck Division, **CLARK EQUIPMENT COMPANY**, Battle Creek 201, Michigan

A BETTER BUY WITH LOCAL SUPPLY—*Genuine Clark Parts*

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a complete recausticizing system

In planning your plant improvement program, the most economical method is to select one competent, reliable supplier for your equipment.

With Graver as your source for recausticizing equipment, you will gain the benefits of Graver design...Graver engineering...Graver fabrication...Graver field-erection.

No other fabricator is better prepared to give as complete and as efficient a turn-key job.

GRAVER ...serving the process industries

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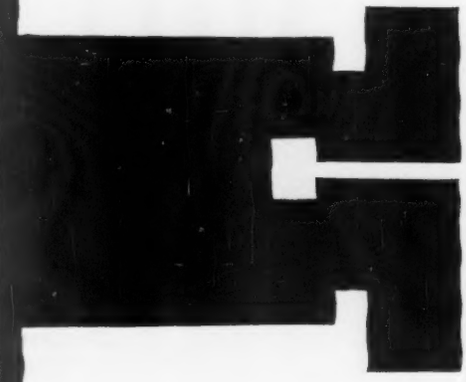

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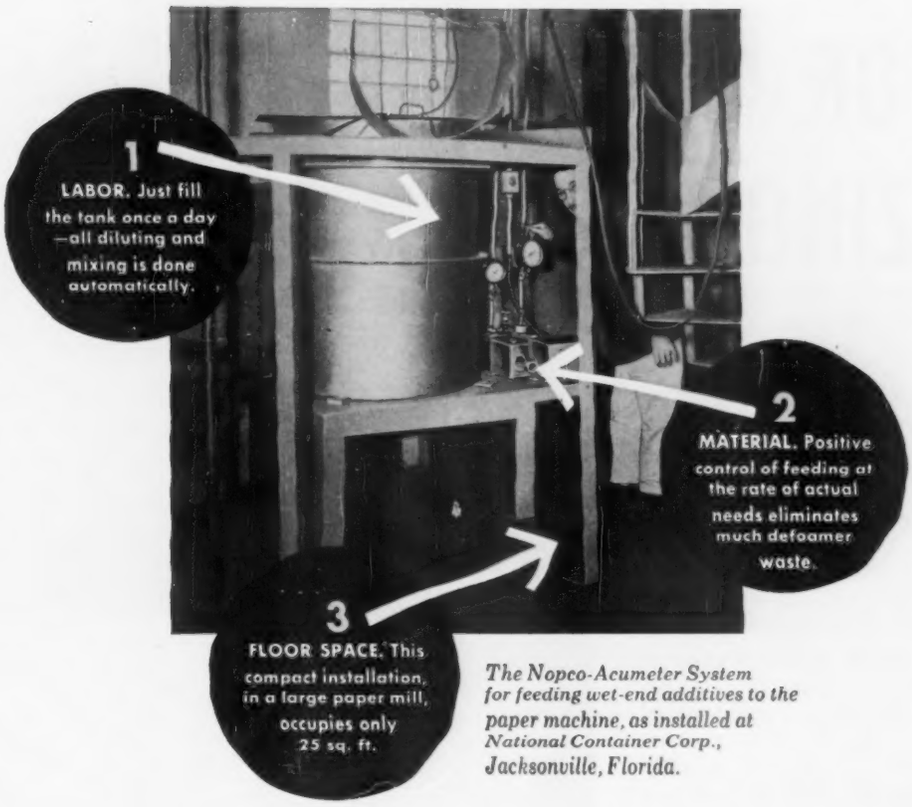
CLEVELAND • DETROIT • TULSA • SAND SPRINGS, OKLA. • HOUSTON • ODESSA, TEXAS • CASPER, WYO. • LOS ANGELES • FONTANA, CAL. • SAN FRANCISCO

NOW! A new automatic technique for adding NOPCO paste defoamers...that makes 3 big savings:


1
LABOR. Just fill the tank once a day—all diluting and mixing is done automatically.
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MATERIAL. Positive control of feeding at the rate of actual needs eliminates much defoamer waste.
3
FLOOR SPACE. This compact installation, in a large paper mill, occupies only 25 sq. ft.

The Nopco-Acumeter System for feeding wet-end additives to the paper machine, as installed at National Container Corp., Jacksonville, Florida.

Nopco is well known as a maker of effective defoamers, both paste and liquid. Now we have taken a big step to help you *apply* them more easily. In the Acumeter Synchronous Flow System, developed by Nopco in collaboration with Acumeter Laboratories, we offer you a highly flexible and automatic method of applying defoamers at any rate of flow you choose—which not only does this important job better—but brings you big savings in costs.

1. The "Acumeter" saves you all the labor of mixing and handling dilute solutions—this is done completely automatically.
2. It saves you large amounts of floor space, for the "Acumeter" takes far less room than the storage tanks and mixing equipment you have been using.
3. You'll save on the quantity of defoamer used, since the system's positive feeding allows for exact control at the level of actual requirements—no need for a margin of safety.

Yet with all these advantages, the cost of the system installed is much less than the cost of a well-designed storage system for handling dilute emulsions.

We offer a booklet which gives much more detail than we have room for here. Write today for your copy.
Nopco Chemical Co., 332 Water St., Harrison, N. J.

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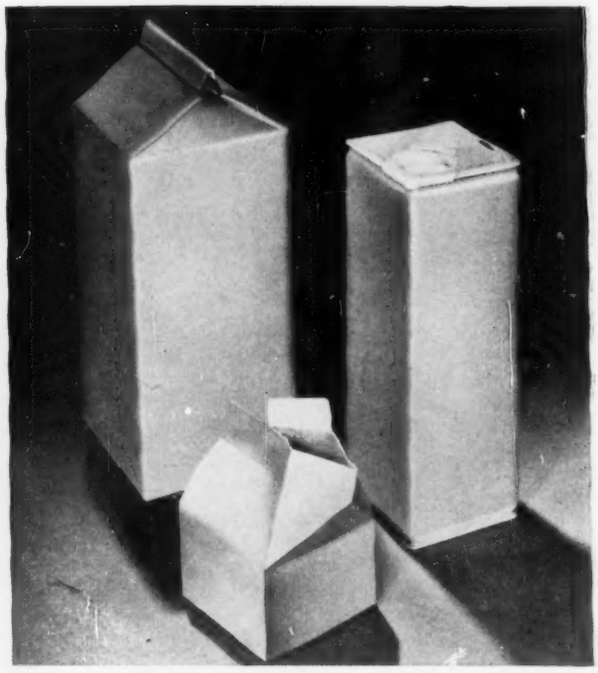
THE RIGHT GRADE FOR ANY SIZING JOB



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Whether you require fortified size or unfortified, pale or dark, paste or dry, there's a grade of Hercules rosin size to meet your sizing requirements at the lowest cost per ton of paper product.

This wide selection of sizing agents to meet the needs of the paper industry is only one good reason why so many mills rely on Hercules for all of their sizing requirements. Hercules' extensive research and service facilities are other typical Hercules "plus points". More than 40 years of service experience is at your disposal. The Hercules technical staff can help you meet your sizing specifications efficiently and economically; and Hercules' network of plants and storage facilities, strategically located from coast-to-coast, is your assurance of a dependable source of supply.

Your Hercules technical sales representative will be glad to discuss your sizing needs with you.

. . . OR MULTI-WALL BAGS—Hercules unfortified sizes are used in many unbleached Kraft papers for the best combination of sizing efficiency and economy.

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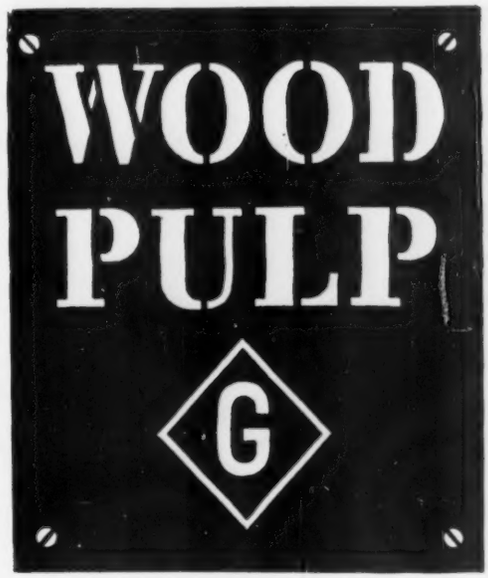
PPSS-6

Established 1886



"It is eternal struggle as well as eternal vigilance that is the price of liberty."

JOHN LORD O'BRIAN

Freedom's battle is never done. We wage it daily—guarding our hard-earned rights, giving comfort, extending aid and guiding those who grope for liberty. Paper, the product of the Pulp and Paper Industry, carries the message of our resolution to all who cherish the dignity of man.

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Item	1953				1954				1955			
	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	First Quarter	Second Quarter	Third Quarter	October
ORDERS: RECEIVED (M Tons)												
Total	250.5	260.3	246.2	220.0	234.1	230.4	234.9	240.9	271.5	290.9	268.6	284.4
Containerboard	129.0	129.1	127.7	116.3	115.7	122.1	123.1	122.8	135.0	148.3	138.1	153.8
Boxboard	121.5	131.2	118.5	111.7	118.4	116.3	111.8	118.1	136.5	132.6	130.5	140.6
UNFILLED (M Tons)												
Total	484.6	534.9	546.0	462.0	365.8	384.1	394.5	389.6	436.6	551.4	632.5	638.3
Containerboard	255.6	287.3	274.5	223.1	167.9	186.3	195.4	200.5	212.1	294.1	346.2	337.3
Boxboard	228.0	237.6	271.5	238.9	197.9	197.8	199.1	189.3	224.5	257.3	286.3	273.0
DAYS TO RUN												
Total	11.3	12.3	12.0	9.7	8.1	8.4	8.8	8.6	9.5	12.1	13.4	13.3
Containerboard	11.6	13.1	11.8	9.6	7.2	8.0	8.6	8.7	9.0	12.5	14.3	14.7
Boxboard	10.9	11.2	12.2	9.7	9.1	8.9	9.0	8.5	10.1	11.7	12.3	11.7
ACTIVITY												
Percent of Operating Time	93	95	91	88	90	89	85	89	95	97	94	102
PRODUCTION (M Tons)												
Total Paperboard	230.7	244.7	238.5	237.6	230.3	239.0	227.2	243.6	255.3	271.9	264.3	286.4
Containerboard	130.7	125.9	123.7	123.6	113.3	123.1	117.5	126.7	128.1	141.6	137.7	150.8
Boxboard	118.0	118.8	114.9	114.0	117.0	115.9	109.7	116.9	127.2	130.9	126.6	139.5
BOXBOARD BY GRADES												
Folding	47.2	47.1	44.7	43.9	45.9	46.1	42.9	45.5	49.0	50.4	47.5	52.6
Other	38.1	39.4	39.2	40.6	39.2	38.2	36.8	41.0	45.9	44.9	44.3	47.4
Special Food Board	18.5	18.8	18.1	18.3	19.6	20.0	18.5	18.6	19.8	23.1	23.2	24.7
Set-Up	14.2	13.5	12.9	11.2	12.3	11.6	11.5	11.6	12.5	12.5	12.6	14.8
LINERS & CORRUGATING MATERIALS												
LINERS:												
Total	79.0	81.9	81.0	80.9	74.2	81.0	76.9	83.1	86.8	93.6	91.5	99.0
Fourdrinier Kraft	59.1	61.7	62.4	61.5	56.0	62.1	59.6	65.0	66.6	75.2	73.6	78.1
Cylinder Kraft	3.8	3.7	3.6	3.7	3.0	3.0	2.9	3.1	2.9	2.8	3.0	3.1
Jute	16.1	16.5	15.1	15.7	15.2	15.9	14.4	15.0	15.1	15.6	14.9	17.8
CORRUGATING MATERIALS:												
Total	35.5	37.5	36.0	36.5	33.8	36.4	35.5	38.2	38.0	40.9	40.5	46.4
Semichemical	16.9	20.0	20.1	20.6	19.2	21.5	21.4	22.5	23.5	25.6	26.1	26.7
Kraft	3.8	4.7	4.3	3.9	3.2	3.6	3.0	3.6	2.4	2.2	1.7	2.5
Straw	5.7	5.4	5.1	5.0	5.1	5.0	4.2	4.4	4.0	4.3	4.5	4.9
Other	7.1	7.4	6.5	7.0	6.3	6.3	6.9	7.7	8.1	8.8	8.2	10.3
BOX PLANT CONSUMPTION (M Tons)	121.2	133.6	122.9	115.1	115.6	118.8	119.1	122.1	126.4	133.8	132.8	148.5 est.
BOX PLANT INVENTORY (M Tons)	599.2	631.2	635.7	604.5	724.0	714.9	703.1	712.9	708.3	693.6	703.5	-

U.S.A. Paperboard Industry Statistics

1953-1954— 43 Weeks 1955

Quarters Expressed as Average Week

National Paperboard Association

A SPECIAL PULP & PAPER REPORT:

What Paperboard Mills Face in 1956!

Congress may hamstring plants using chemical additives— merger bills, higher freight rates and other problems

• Winding up its biggest year in history, with even a bigger one predicted in 1956, leadership of virtually the entire paperboard industry of America met in New York City's Waldorf-Astoria in November to take an accounting of itself.

The National Paperboard Association, representing 88% of the board industry with 117 members (Crossett and Western Kraft Corp. became new members), faced up to the future, too. It recognized grave problems ahead.

One is a national Congress that, as of now, appears dead set to hobble

AT NPA MEET. From left, DR. JAMES E. GATES, Bus. School Dean, U. of Georgia, AL LUHRS, Exec. Secy. NPA, and THOMAS NOEL BLAND, re-elected NPA Pres., also Pres. of Fibreboard Products; WESLEY W. RACE, Vice Pres. Cornell Paperboard Products, DONALD S. LESLIE, Pres. of APPA and Hammermill Paper, and MALCOLM LOWE, Vice Pres., Lowe Paper Co.

MORE AT NPA. From left, G. T. COCKERILL, Admin. Vice Pres. of Bathurst Power & Paper, with Q. H. (PAT) O'REILLEY, Secy. of CPPA; FRANCIS S. WAKEMAN, Exec. V.P., New Haven Board & Carton, P. A. SCHILLING, re-elected Vice Pres. NPA, and Pres. of Waldoft Paper Products, and DR. CHARLES F. ROOS, The Econometric Institute.

the industry's progress with restrictions on new chemical additives, despite the fact that there is no record in a quarter century of anyone ever being made sick by such treatments of paper or board.

Another is tariffs, and NPA has presented a brief in Washington against any further lowering of duties on process paperboards and test liners.

Anti-merger measures, labor decisions that circumvent Taft-Hartley principles, an anticipated freight rate increase—these and other problems were aired.

NPA AND APPA GET CLOSER TOGETHER—President Don Leslie of American Paper & Pulp Association made a surprise appearance on the program—at least it was unscheduled—and his remarks and those of NPA President Thomas Noel Bland indicated the two associations will work much closer together in the future.

"At your command are any resources of APPA," said Mr. Leslie, also president of Hammermill. "We invite your fullest cooperation."

He explained that APPA is merely a federation of 15 "totally independent associations." His obvious inference was that the powerful NPA, even if it actually joined APPA, would not lose independence.

"These associations are members of APPA, not the paper companies," he said. "Each association has a member on the board of governors."

APPA cannot take a position on tariffs, legislative matters or other important issues, without unanimous consent of the board. Even a limited cooperation betwen NPA and APPA, as already practiced in community relations, would create a stronger industry front and reduce duplication of work and costs, some leaders already have argued.

MR. BLAND URGES NEW RESEARCH—Re-elected to the NPA presidency a second term, Mr. Bland opened the sessions with a strong plea for more cooperative research, in which small companies may join at low cost.

The head of Fibreboard Products, Inc., now wholly owned by Pabco Products of San Francisco, he recommended operations research—in production scheduling, plant locations and sales programs—and market research—in consumer preference, shifts in buying power and potential demand.

"Only $\frac{9}{10}$ of 1% of the sales dollar in the paperboard industry is spent for research," he said. While this is a fraction better than amount spent by the rest of the paper industry, it is now almost entirely devoted to product improvement and new products.

SEES NO FUTURE IN PULP EXPORTS—Dr. James E. Gates, dean of the U. of Georgia's business administration school and from time to time consultant to paper industries of the Southeast, gave NPA a forecast on the outlook for raw materials. His conclusions:

(1) Pulpwood will be plentiful in the South but prices are going up about $1 a cord a year. By 1970 may reach $40, by 1980, $50. Plenty more wood can be grown; millions of acres are not now effectively used. But the U.S. is becoming urbanized; 1% of negroes are leaving rural areas of the South every year, and in time there will be a labor crisis in the woods.

(2) Waste paper now is plentiful, but it is often a drug on the market; there will be no increase in supply; the price will remain stable.

(3) Woodpulp as well as paperboard prices will rise; the rate has averaged $3 a year. There will be no lasting markets overseas for woodpulp, "unless for some place like Arabia or the Sahara Desert where there are no trees." Why should those countries spend hard-to-get foreign exchange on pulp when they have

What Dr. Roos Predicts for the New Year

• The U.S.A. paperboard industry's new production record of 13,900,000 tons in 1955, may be short-lived, as the demand for board is expected to reach a new high of 14,500,000 tons in 1956.

This was one of a considerable number of predictions made by Dr. Charles F. Roos, head of The Econometric Institute, Inc., 230 Park Ave., New York, who, as usual, was the final speaker at the NPA November meetings. Back in Blue Eagle days, he was research director for Gen. "Iron Pants" Hugh Johnson and NRA, and for years he has been an economic advisor to paper and paperboard companies.

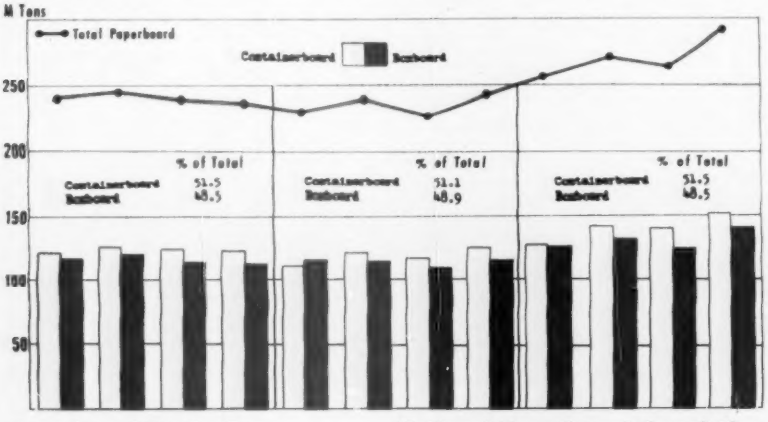
"Industrial production will rise for the next nine months, but more moderately than in 1955, and could level off in late 1956 and dip downward in 1957," he said.

Dr. Roos foresaw these conditions as the economic setting for his forecasts—restrictive measures of the Federal Reserve, about a five billion dollar tax cut, about a 4% increase in disposable income, higher wages, price increases and price strength and improved productivity.

A suggestion he offered was that higher labor costs in department and retail stores should pave the way for more pre-packaging of merchandise.

"New and better equipment, mechanical operating sequences as in packaging, electronics and atomic energy will induce another period of widespread capital investment, at the same time offsetting high labor costs with better productivity," he said. However, he reported that "productivity has been increasing at only a 2 1/2% annual rate in U.S.A. as compared with 7% in Russia in recent years."

In paperboard, Dr. Roos said major gains will be in containerboard and special foodboards, providing new markets continue to be developed at the present pace. Demand for foodboard, rising in recent years at 10% a year, will go up 9%, but this will require a sales job for 7% new markets. Although losing some markets to cellophane, folding box demand, he said, should rise 5% in 1956.



Paperboard Production **National Paperboard Association**

greater needs, as arms, for example? He predicted higher wages, higher demand and a higher base price for European woodpulp.

MERGERS LEGISLATION FORESEEN—It is probable that Congress this year will pass a law requiring that the government be supplied with complete information about proposed company mergers 90 days before they take effect.

This forecast by NPA Counsel Malcolm K. Whyte was of interest because, by PULP & PAPER's most recent count, there have been over 70 mergers in the paper and paperboard industry in 1954-55 and the trend is continuing in 1956. Government officials, said Mr. Whyte, are becoming restless because at present they must obtain first news of many mergers from the newspaper accounts.

The Federal Trade Commission is working closely with the Department of Justice in this anti-merger drive. The Crown Zellerbach–St. Helens and Union Bag–Hankins Container merger cases are still in the administrative stage and it may be some months before the FTC renders a decision.

The FTC has attempted in recent decisions to establish guide posts for solution of the dilemma facing sellers

TALK FREIGHT RATES, BOARD, PULP. (l to r): JAMES P. FRIEL, Vice Pres. and General Traffic Mgr., and NPA Traffic Chairman, brought news of impending freight rate rise. F. HENRY SAVAGE, re-elected Vice Pres. of NPA, and an International Paper Vice Pres., discusses a pleasant topic with CLARK H. MORIAN, JR., Gen. Sales Mgr. of Texas Pulp & Paper.

THEY HAVE BEEN AROUND BEFORE. (l to r): J. C. MORRIS, Vice Pres. of Production, Ohio Box Board, Rittman, O., plant; MARVIN W. SWAIM, First Vice Pres., and Gen. Mgr., Alton Box Board, and former NPA Pres.; and RALPH A. WILKINS, Vice Pres., Paper Products Div., Bird & Son Inc.

What's Wrong with Managers?

Why he always places himself behind "8-ball" by unrealistic approach to bargaining table.

● Because of the position he takes at bargaining tables with labor, the American businessman is doing himself a great disservice, putting himself in a bad light before both employees and the general public.

This is the substance of an unusually frank appraisal of industrial relations by Colin Gardner III, vice president and gen. mgr. of Gardner Board & Carton Co., a younger member of one of the most prolific management families of this industry.

Of all the speeches made at the National Paperboard Assn. meeting in New York in November, this obviously had the greatest impact upon the audience of top executives, whether they agreed or not.

Because the businessman goes to the bargaining table inevitably with a counter offer which "is less than realistic and reasonable, he is invariably depicted as opposing the working man and his achievement of normal desires," said Mr. Gardner. The American businessman thus loses prestige; the unions always capitalize on his actions.

WRONG—ON TWO COUNTS—According to Mr. Gardner, this is wrong: (1) From a moral point of view, because it is both hypocritical and gives a wrong picture of management's essential interest in the worker, and (2) from a practical point of view, because management surrenders leadership to the unions and whatever chance it might have had to influence thinking of employes.

Today's manager in industry was pictured by Mr. Gardner as a man who must be objective (not biased or "anti-worker") because of the many checks and balances he contends with —governments, stockholders, unions and employes. It should be recognized that he can provide genuine leadership to employes.

MANAGERS' LEADERSHIP—IS ALWAYS DISCOUNTED—He said the public, today, has the same attitude toward industrial managers as have employes and unions. "The exaggerated claims of union leaders go unchallenged and the public accepts the unions as sole benefactors of labor." The businessman, he said, is regarded as "a technician," and therefore not qualified as a "real leader" of public opinion, general welfare, etc.

COLIN GARDNER III—Urges a new approach by management to the bargaining table. "The businessman is a liability, now, to the people he only wishes to help."

"He is a liability to the people he only wishes to help," asserted Mr. Gardner.

This was a startingly honest discussion of major dilemma of industry, but if his paperboard industry friends thought that Mr. Gardner was too idealistic, picturing an impossible Utopia of management leadership, he climaxed his remarks by contending his ideals already are being achieved.

CITES GENERAL ELECTRIC CO. POLICY—He said new bargaining procedures of General Electric Co. are as he described, and he added that Gardner Board & Carton likewise is trying to change the picture at its bargaining tables, so management is recognized as coming in with a program for, and not against, the workingman.

Mr. Gardner made his report as chairman and spokesman of NPA's industrial relations committee. The forepart of his report dealt with pensions and welfare plans (he cited General Electric's medical health insurance—the employe pays the first $25, the company the rest up to $2,500, with some restrictions); he reviewed wage increases in paperboard, which he said average about 7 cents an hour; he spoke of surveys showing rising fringe pay costs; he lauded the Pacific Coast and Southern board mills for rising safety records, but said other areas need to improve; and he briefly reviewed the SUP issue—supplemental unemployments plans.

NOTES PULP & PAPER ARTICLES—Regarding this last point, the SUP, the guaranteed annual wage philosophy, etc. Mr. Gardner later told a PULP & PAPER editor that he had noted the series of articles on this important industrial question in several issues of this magazine (Aug., Sept., Oct., and Dec., 1955) and approved of bringing out the facts this way.

granting "functional discounts" to buyers who perform some function of both wholesaling and retailing.

CHEMICAL ADDITIVES BILLS ARE THREAT—Regarding the threat that Congress may "harass" this industry by demanding licensing or pretesting of chemical additives to paperboard, Counsel Malcolm Whyte said:

"No one has ever even gotten a headache from a paper additive in over 25 years."

The industry, he said, would prefer an injunctive type bill, which (1) is restricted to new additives, (2) only to additives that can reasonably become part of the material packaged, and (3) would require that the government proceed against a paperboard company within 90 days, and no later.

APPA and NPA have taken a strong position against such bills, introduced as food and drug act amendments which would virtually hamstring industry progress.

Biological research conducted at Syracuse University has established that no such new legislation is necessary, according to J. C. LaGrua, Federal Paper Board Co., Inc., NPA research committee chairman.

If there must be such legislation, APPA and NPA both demand the burden of proof concerning alleged harmful effects of any additives must rest with the government. Syracuse researchers did come to a conclusion that the industry should do its own policing of additives as they apply to milk or bread containers.

ODOR IN PAPER—Mr. LaGrua said paperboard odor is found when reducible sulfur compounds are present in stocks. The industry, in a poll, voted to continue the Syracuse research. It will now study terpene aldehydes. Seminars for paperboard technical men will be held in 1956 in New York, Chicago, San Francisco, Atlanta and Middletown or a nearby point in Ohio.

FREIGHT RATE INCREASE IN WORKS—A 5% to a 7% increase in freight rates was facing the paperboard industry early in 1956. The higher figure was the latest report to reach the industry, according to NPA's traffic committee chairman, James P. Friel, vice president and general traffic manager, Central Fibre Products Co., Chicago.

Free movement given now by railroads to skids and pallets is a distinct advantage to the paperboard industry, according to Mr. Friel, reducing shipping costs considerably. It would be unwise to demand that the tops on board shipments go free, too, he said, as wooden box shippers would then demand concessions and prejudice advantages the paperboard industry now enjoys.

STANDARDS DILEMMA—F. S. Wakeman, executive vice president, New Haven Board & Carton, reported on progressive revisions being made of paperboard standards. The Southern Fourdrinier Kraft manufacturers and the Northern Container Board groups decided not to participate in revisions as it became apparent that their widely divergent operating conditions, contrasting raw materials and other factors made it impractical to try to unite on standards.

CANADIANS HAVE PROBLEMS, TOO—For the 21st year, a guest group of Canadian board manufacturers attended.

W. H. "Pat" O'Reilly, CPPA secretary and spokesman, said nearly every section of the Canadian paper and board industry is so "afflicted with government investigations, it is almost an occupational hazard in Canada." Some 14 board manufacturers are accused of forming an "illegal combine."

If there were no tariff restrictions, he noted, the U.S. could supply all Canada needs with 14½ days production, at the November rate.

Fantastic Growth Shown in New Figures

U. S. paperboard production for 1955 was 13,900,000 tons, an all-time record, according to pre-year end calculations by Alvin A. Newburg and W. F. Westcott, NPA statisticians. It now exceeds all other paper production combined.

New machines and improvements will bring capacity of board mills to 16,370,400 tons by 1958, their report showed. Population growth alone will not absorb this increase; there must be more new uses.

In 10 months of 1955, production was running 13.9% above the previous year. The 11,500,000 tons made in that period was higher than any complete year prior to 1951.

In the week of Nov. 5, said Mr. Newburg, who read the report, the industry received more orders than in any previous week in its history. Until March, 1955, it never had exceeded weekly production of 270,000 tons. Yet, for seven successive weeks after Labor Day, it averaged over 290,000 tons.

SOME STRIKING COMPARISONS—Fourdrinier kraft's proportion of total liner was 80% in the first 10 months of 1955; 10 years ago it was only 51%. For the 10 months of 1955, folding box production increased 9% over the 1954 like period; but it likewise jumped 34% over the 1946-50 annual average. Special foodboard was up 14.1% and all other board up 17.8% for 10 months of 1955, over the like 1954 period.

For corrugating medium, the "Cinderella" grade of the industry—semi-chemical hardwoods—have risen from 22% to over 62% in 10 years. In the same period, straw use declined from 31% to 11%.

A truly sensational statistic—the paperboard industry has been growing at a rate of 5% a year for 30 years. Can such a fantastic rate be maintained? A word of caution—most of this growth was due to new uses.

OLD ASSOCIATE WELCOMED BACK. (l to r): HERMAN WHITMORE, Vice Pres., Robt. Gair Co. Inc., and Pres. PAUL SCHILLING of Waldorf Paper Products, greet IRA KELLER, an old friend from his days as Container Corp. executive, but now Pres. of Western Kraft Corp., Albany, Ore., new member of NPA.

CANADIANS ARE WELCOME. (l to r): J. STANLEY BABBITT, Vice Pres. and Gen. Mgr., Gair Co. Canada, Ltd.; ROBT. M. MILLIGAN, St. Lawrence Corp. Ltd.; and CECIL MATHESON, Mgr. of Board Sales, Fraser Cos. Ltd.

PREPARING FOR THEIR REPORTS. (l to r): HARRY S. ADLER (standing), veteran Secretary of NPA; MERRITT THIEM, Traffic Counsellor, and ALVIN A. NEWBURG, "Mr. Statistics," look over the broad shoulders of MALCOLM K. WHYTE, Association Counsel (seated).

How World Markets are Won and Held

Pulp, paper and board producers hear: "Come on in, the water's fine!" But lots of problems must be solved

By RUTH SHALLCROSS

• Readers of the WORLD REVIEW NUMBER of PULP & PAPER need not be told that many ingredients of a good market exist in a number of foreign countries at the present time. They know that population pressures alone are increasing world demand for pulp, paper and board and their various converted products. Increased travel and communication of officialdom of all nations, especially of the United States, have introduced many paper products to potential world consumers. General economic conditions have improved since the war in most non-communist countries resulting in a rise in the general standard of living and, hence, in purchasing power with which to buy pulp, paper and paperboard products.

GROWING DEMAND FOR NORTH AMERICAN PULP AND PAPER—European sources of supply to meet this increasing foreign demand are limited, creating a growing pressure on North American sources. So say the industry experts on foreign markets.

A glance at the U. S. export figures on pulp, paper and board for the first six months of 1955 compared with the same period a year earlier shows that exports of woodpulp increased 111% and paper and board exports are up 52%. The 1954 level, we will remember, was the highest on record, even surpassing the peak levels of 1940 and 1951-52 for each category of pulp, paper and board by substantial amounts.

From all available statistics it would seem that only man's limitations in meshing raw materials, labor and capital can prevent the growth of the U.S. pulp, paper and paperboard exports. Such must be the optimisim of many leaders in the industry, who, like those who held their annual meeting in a capital of a foreign country for the first time in 1955, have served notice on European leaders that foreign markets cannot henceforth be considered the exclusive province of foreign producers.

Dr. Shallcross is Consulting Economist and Lecturer, Institute of Paper Chemistry. This article, written especially for PULP & PAPER, is first of a series.

SOME MAY HOLD MARKETS ABROAD—The thought cannot help but arise in the minds of many pulp, paper and board producers that foreign markets might provide the answer to the age-old problem of maintaining a profitable production-capacity ratio. Several pulp producers thought a year ago that they might have to produce considerably below capacity levels but found that exporting kept production rates high. It might allow them to carry on a continuing expansion program without having to consider the usual lag between capacity and domestic consumption. The optimism is enhanced by the assurance—at least more than at any time since the war—of peaceful years ahead which would continue to improve world trade conditions.

There is no doubt that some U.S. producers will get and hold a good slice of some foreign markets.

QUESTIONS THAT WORRY U.S. PRODUCERS—But for the producer who has always competed only in the domestic market, many uncertainties arise as to what entering foreign trade involves. What are the risks? Will the rules of the competitive game be different? How different? Shall foreign sales be handled by a company staff or turned over to an exporting firm? Will foreign markets be stable? Can American producers compete with foreign ones whose labor costs are much below the American level? Will exchange problems prove difficult? Other questions will occur.

Most questions concerning entering foreign markets fall into one of two broad categories. The first group involves uncertainties of a particular market at a particular time. The second group can only be answered by an analysis of long-term economic factors. Both categories of uncertainties should be satisfactorily resolved before a producer expands capacity beyond domestic needs in order to meet foreign competition.

HOW FIRST PROBLEM MAY BE SOLVED—The first category of uncertainties concerning foreign trade can be resolved in one of two ways: Either, (1) by setting up and training an expert staff to handle foreign sales or, (2) to use the services of a pulp, paper and board exporting firm.

The staff assigned to handle foreign sales would set up a type of market

RUTH SHALLCROSS— "Only man's limitations in meshing raw materials, labor and capital can prevent growth of exports."

Ruth Shallcross Serves

Institute and Industry

Ruth Shallcross is widely known in this industry. She has served as a business consultant to some of the leading pulp and paper companies. As well as doing private consulting work, she is also consultant and lecturer on economics to the Institute of Paper Chemistry, Appleton, Wis.

She will contribute other articles to PULP & PAPER for future issues on the subject of foreign trade—its problems and its potentials, as they affect this industry particularly.

She received her a.b. degree at University of Nebraska and ph.d. in economics at Bryn Mawr, in 1938. She studied and gathered materials for her doctor's dissertation three summers abroad—one in London, one in Paris and one in Germany, studying tutorially with Prof. Arndt of Frankfurt University.

She was research director of the National Business and Professional Women's Clubs, 1938-40. She taught economics at Bryn Mawr. From 1942-45 she did statistical and planning work for the War Production Board (and its predecessor, OPM), Pulp and Paper Division, Washington, D. C.

In 1946 she joined the staff at the Institute in Appleton as research associate. In 1951 she became a consultant, continuing her association with the Institute as consultant and lecturer.

Ruth Shallcross lives at Lake Shore Drive, Madison #3, Ohio. She is married (husband is in the builders' hardware industry) and they have a son and daughter, both in their teens. Her hobbies are flower gardening, swimming and outdoor sports.

research. Pertinent data on world trade would be kept current for each country in which a producer is interested. Such data would include: Basic statistics on production, imports and exports and general market conditions, such as the "Foreign Market Surveys' of APPA's Export Committee and in the WORLD REVIEW NUMBERS of PULP & PAPER; the rate of exchange and the status of exchange controls, import and export licenses and other barriers to foreign trade; data on foreign tax laws, freight rates and prices of competing foreign products translated into dollars.

Information on world trade in pulps and paper can be gleaned from such publications as: "International News Survey" published by the International Monetary Fund; reports of the Fund and of the International Bank for Reconstruction and Development (World Bank); material from The National Foreign Trade Council, Inc.; reports of GATT (General Agreement on Tariffs and Trade); The World's *Paper Trade Review; Foreign Commerce Weekly*, published by the U.S. Department of Commerce; *Wall Street Journal;* and *The Economist* (of London.)

MUST HAVE A SALES FORCE—Industry leaders know that market research with its array of useful statistics and economic facts is insufficient to sell products, even in the domestic market, without a well-trained sales force in the field. Some pulp and paper producers use selling agents in the domestic market, especially in geographical areas where consumption is not large enough to warrant a sales staff. The same situation exists in foreign markets.

Few pulp and paper companies would have a continuous flow of a large enough volume or variety of products to warrant setting up an agent in even a few foreign markets. Thus a company that specializes in buying and selling pulp and paper in world markets can serve this function usually more efficiently than a domestic producer can do it for himself.

The domestic producer would sell to an exporter just as he does to any other domestic consumer. An exporter can handle all types of pulp and paper products; he can go from one market to another because of his many agents in all the big cities of the world; he most likely has roving salesmen who travel much of the time seeking out new markets and understanding the constant changes in known markets; he can carry the extra risk of delayed returns—a working capital to finance sales with terms of 60 days instead of the usual 30, for example; he can get expert help in complicated financing made necessary by ever-changing balance of payments and government controls.

HOW EXPORT COMPANY CAN SERVE—Inasmuch as exporters are the largest earners of foreign currency, they are constantly aware of the amount of any countrys money that is for sale at any one time, at what price, and with what barriers attached. They are in the position when one country is out of dollars temporarily to finance in other currencies without having to take a loss. They are also in a position to switch to another market when one has dried up temporarily because of lack of foreign exchange. Few companies can do this on their own even when limited to a few foreign markets. In short, the exporting company can relieve the domestic producer of the unkowns in foreign trade.

But the producer should know that he is also relieved of the chance of extra profit in selling in high-priced foreign markets. However, any domestic producer contemplating entering foreign markets would do well to make the acquaintance of the executives of exporting firms handling pulp, paper and board before making a choice as to whether to set up a company staff responsible for foreign sales or to attempt to sell to an exporter.

WHAT ABOUT THE FUTURE?—But no staff member with his pertinent statistics in order, briefed and beautifully portrayed by graphs and charts, nor even an exporter with his vast experience and skill in handling international trade, important as they both can be, can answer for any particular producer the questions relating to the second category of uncertainties in foreign competition which stem from long-range economic factors.

These uncertainties center around the key question of a producer: "Can I be assured of being able to meet foreign competition continuously enough to warrant basing future expansion programs on it?"

The exporter buys from whatever source—domestic or foreign—the type of product and quantities which his foreign agents have designated are firm commitments backed by dollars or other exchangeable currency that does not involve a loss.

He cannot guarantee to take what domestic producers have in surplus and "get rid of it" abroad. His own economic existence dictates that he strive to find markets somewhere, but not for every domestic producer who may have a surplus product to sell abroad. He knows by experience the meaning of foreign competition.

But top management in any company must make the final decisions and take full responsibility for the risks involved in foreign sales. His own appraisal of present and future economic conditions must, in the final analysis, determine whether or not capital is expended. Some help can be found in economic analysis which can provide a basis for the decisions.

Future articles in PULP & PAPER, will explain some basic tools of economic analyses which can aid in decision-making. They will touch upon general economics of foreign trade and upon the factors which determine the relative productivity between American and foreign competition.

They will be directed toward answering the questions above on the continuity of foreign markets. It is hoped that they will help on the question: "What are the limitations on foreign competition and the risks involved over the long-term for companies other than the few big ones already in the foreign markets?"

The big companies that have already taken the plunge into the sea of foreign competition seem to be saying, "Come on in, the water's fine."

Recommended Reading—

Book Analyzes U.S.A.

"A compliment gathers importance when it is said of one with no intention of his hearing it."

That's how Ruth Shallcross, special writer for PULP & PAPER, sizes up a little book, "The Secret of American *Prosperity", originally written by a* Swiss for an audience in France, with no thought of a hearing in this country.

William E. Rappard, professor of political economy at Geneva and director of the Graduate School of International Studies there, wrote it as an essay for the Conference of International Economists in Paris. An English translation has been published by Greenberg (201 East 57th St., New York 22, N. Y., 124 pages, $3.50).

"Prof. Rappard defines the science of economics as explaining how men produce and share the goods to satisfy their needs," says Miss Shallcross. "He asks what economic system in what country and in what period is most favorable to this goal. He shows that the American system by all odds and measures is most favorable to this goal."

How does he do it?

She points out that he discards "usual factors of natural resources and lack of war damage here, and stresses four others: Mass production, application of science to production, passion for productivity, and spirit of competition. In short, a free, dynamic, private competitive economy is responsible for our efficiency and, hence, superiority."

"Per capita paper and paperboard consumption in the U.S.A. in 1956 will reach an estimated all-time record high of 415 lbs., and that would be 30 lbs. over the previous record in 1954."—**E. W. (Ted) TINKER,** executive secy., APPA.

"Our subcommittee is gratified that the newsprint industry is making every effort to meet a demand which is increasing, currently, about 7,000,000 tons per year. Given proper incentive, private capital will continue to be available for investment in this industry. We hope increased supply will result in a lower price."—**Rep. Klein** (N.Y.-Dem.), House commerce subcommittee.

"Technological advancements will increase operating efficiencies tremendously. The paper industry holds such promise of growth, economically and technically, I hope I can be around to watch it the next 25 or 30 years."—**RUDOLPH T. GREEP,** production mgr., S. D. Warren Co.

"We are in the advanced stage of a business boom, but not the final stage. The election can prolong this boom. But it is well to have a weather eye open to a possible business storm sometime in 1956."—**MORRIS C. DOBROW,** exec. secy., Writing Paper Mfrs. Assn.

"There was heavy demand throughout the year for glassine and greaseproof papers. The market continues strong."—**FOLKE BECKER,** chairman, and **BENTON R. CANCELL,** president, Rhinelander Paper Co.

"Progress of packaging and development of expansion opportunities are our primary objectives. We are hopeful that in five years, sales will be substantially more than double our present rate."—**R. CARL CHANDLER,** chairman and **J. A. KEENAN,** president, Standard Packaging Corp.

Sonoco Installs Enclosed Hood

Sonoco Products Company at Hartsville, S. C., has installed a totally enclosed Ross-Hooper hood over the dry end of their paper machine, designed to provide more uniform drying by prevention of drafts.

How Representative Firms Are Doing

	Net Sales (000)	Income Bef. Taxes (000)	% of Sales	Net Income (000)	Net Per Share
Puget Sound Pulp & Timber Co.	$ 17,640	$ 5,251	29.8%	$ 2,520	$3.24
Rayonier Incorporated	105,677	23,431	22.2	12,244	2.17
Crown Zellerbach Corp. (6 mos. end Oct. 31)	170,144	33,749	19.8	18,727	1.62
Diamond Match Co.	97,153	12,695	13.1	6,545	2.16
Eastern Corp.	17,304	1,623	9.4	865	2.35
Glatfelter (P.H.)Co.	13,546	n.a.	-	1,550	4.25
Great Northern Paper Co.	41,996	7,015	16.7	3,569	3.21
Hammermill Paper Co.	25,046	3,559	14.2	1,904	2.27
Kalamazoo Vegetable Parchment Co.	36,643	n.a.	-	1,770	2.15
Marathon Corp. (9 mos. end Oct. 31)	106,654	n.a.	-	7,385	2.02
Oxford Paper Co.	41,978	5,666	13.5	2,729	3.09
International Paper Co.	589,445	120,296	20.4	58,181	5.54
Mead Corp.	104,967	13,777	13.1	6,581	4.92
Riegel Paper Co.	36,930	3,119	8.4	1,441	1.46
Scott Paper Co.	184,993	32,299	17.4	15,949	1.98
St. Regis Paper Co.	179,613	26,852	14.9	13,175	2.15
Union Bag & Paper Corp.	91,661	22,410	24.4	10,652	6.01
Container Corp. of America	158,601	23,898	15.1	11,471	4.49
Gair (Robert) Co., Inc.	118,450	16,359	13.8	6,749	2.02
National Container Corp.	69,655	12,548	18.0	5,756	1.59
Sutherland Paper Co.	42,662	5,294	12.4	2,531	2.52
International Cellucotton Products	115,316	9,834	8.5	4,810	2.04

The nine months sales and earnings for 1955 were especially prepared for Pulp & Paper by Cyrus J. Lawrence & Sons, members New York Stock Exchange, from statistical services and published reports. While the figures are believed to be correct, no guaranty is given as to their accuracy.

GROUPED ACCORDING TO TYPE OF PRODUCTS—9 MONTHS, 1955

Future for Woodpulp—1956 and Later

● What are the basic trends in the U.S. woodpulp economy as a new year dawns? What basic problems are foreseen and how may they be solved?

Here are some answers from *James L. Ritchie,* executive director, U.S. Pulp Producers Assn.:

"During next 20 years, population increases alone should result in a 32% increase in U.S.A. woodpulp requirements.

"On the basis of 2 lbs. per capita increase per year, domestic woodpulp requirements would total 35.2 million tons by 1975—60% greater than 1955 rate of consumption.

"By broadening the species base, the industry has brightened prospects for significant long range growth in domestic pulp and paper supply.

"The scope and pattern of our forest economy after 1975 is being shaped by forest policies and practices now in effect.

"The long range outlook for fiber is perhaps better today than it has ever been in the history of the U.S. industry.

"With our current knowledge of fiber technology, fiber supply can be expanded in any direction to fit almost any pattern of end-product development.

"We face a long range prospect that woodpulp supply will be adequate, in respect to pattern as well as volume, to meet this country's growing needs.

"Consumption of woodpulp has more than tripled in this country since 1929."

New Dept. at East Texas Mill

FRED NASON (left), has been named to newly created post of Director of Research and Planning for East Texas Pulp & Paper Co., Evadale, Tex., announces R. M. BUCKLEY, Exec. Vice Pres. Mr. Nason is succeeded as Tech. Dir. at Evadale by JOHN BENJAMIN BECK (right), former Gen. Supt. of Oregon Pulp & Paper, Salem, Ore., and previously Supt. and Tech. Supervisor of E. B. Eddy Co., Hull, Que. He is a graduate of U. of Toronto with a master's in science. Mr. Nason has been at Evadale since before its startup, and was for years with Hollingsworth & Whitney.

INDUSTRY NEWS OF WORLDWIDE INTEREST

A LETTER FROM SCOTT PAPER CO.'S PARTNER IN MEXICO—Scott Paper Co. has formed a partnership with Dr. Dante Sandro Cusi and his Mexican company, Industrial de San Cristobal, S.A., Mexico City, to manufacture and produce Scott tissue and other paper products in that country.

But first reports that the cane bagasse process which Dr. Cusi pioneered in Mexico, would be used, apparently is not true.

In a letter to PULP & PAPER, Dr. Cusi writes:

"By means of the present letter I am confirming that, although the Mechano-Chemical Process for manufacture of bagasse pulp was used by this company during experimental stages, at present we are not using it, as the end-products we are manufacturing require characteristics which cannot be obtained by the said Mechano-Chemical Process and therefore, it has been completely abandoned by us.

"At the present moment this company is utilizing a process which has been developed by ourselves and which, in our opinion, is more efficient, produces a better quality pulp and at less cost than the one obtained by the above mentioned Mechano-Chemical Process.

"Cia. Industrial de San Cristobal, S.A., Dr. Ing. Dante S. Cusi, President."

SWEDISH FELT FIRM'S ANNIVERSARY—This year Nordiska Maskinfilt AB of Halmstad, Sweden, is celebrating its 50th year as a manufacturer of papermakers' felts. It now has 400 employes and floor space of 330,000 sq. ft., selling its products to many countries. Gunnar Westerberg, the managing director, succeeded his father, Gottfrid Westerberg, in 1950. The former headed the firm since 1917, making it widely known. Wool is imported from South America, New Zealand and Australia.

The felt mill has a 680 in. loom which is said to be the largest in the world. It makes a felt which in the loom is 51 ft. wide, later reduced to about 25 ft. The largest felts may weigh over a ton, such as one recently made for the Swedish Stora Kopparberg mill at Kvarnsveden, which was 200 ft. long and 20 ft. wide. Subjected to high speeds, great heat and chemical and bacterial deterioration, its life is limited.

Nordiskafilt—as the company is commonly called—has shipped many felts to mills in South America, Japan, India and other distant countries.

SPAIN MAKES IT ROUGH—When the U.S.A. made its deal with Spain for military bases and economic aid, many U.S. firms jumped to the conclusion that Spain should be looked at carefully for trade and investment possibilities. Apart from military construction contracts and materials bought with FOA money, however, most efforts have ended in disappointment. The reasons:

The law still limits foreign participation in the ownership of a Spanish company to 25%. This rule has its exceptions; the preamble to the law on the new Rio Tinto Mining Co. (copper) confirms that the government will allow as high as 49% in certain individual cases. But the Spaniards are not yet ready to grant control to foreigners.

There is not government guarantee that dividends can be transferred or capital repatriated in foreign currency except as a result of a special agreement negotiated with the Government on a case by case basis.

NOTICIAS MUNDIALES DE LA INDUSTRIA

CARTA DEL DR. CUSI—La Scott Paper Co. recientemente estableció sociedad industrial con el Sr. Dr. Dante Sandro Cusi y su compañía, la Industrial de San Cristobal SA, Mexico, para producir en dicho país los productos Scott.

Mas resulta no exacta la noticia que en la planta se emplearía el procedimiento mecano-químico originado por el Dr. Cusi para fabricar pulpa de bagazo. En una carta recibida ultimamente nos declara el Dr. Cusi:

"Por la presente me permito confirmar a usted que, aunque la manufactura de pulpa de bagazo el procedimiento mecano-químico fué usado por nosotros durante la época experimental, en el actualidad no lo estamos usando, pues los productos que estamos fabricando requieren características que no pueden obtenerse utilizando dicho procedimiento mecano-químico, y que, por consecuencia, ha sido completamente abandonado por nostros.

"Esta Compañia en la actualidad está utilizando los procedimimentos que ella misma ha desarrollado y que a nuestro juicio, son mucho más eficientes, proporcionan pulpa de mejor clase y a mucho menor costo de lo que es obtenible usando el mencionado procedimiento mecano-químico.

"Cia. Industrial de San Cristobal S.A., Dr. Ing. Dante S. Cusi, Presidente."

CUMPLEAÑOS—En el presente año celebra los 50 de existencia la Nordiska Maskinfilt AB de Halmstad, Suecia, fabricante de fieltros. La empresa actualmente tiene 400 empleados, planta con extensión de 30.960 metros cuadrados, y ventas en todas partes del mundo. Sr. Gunnar Westerberg, gerente desde 1950, es hijo del anterior jefe Gottfrid Westerberg que encabezó la empresa desde 1917.

La empresa usa lanas importadas de Australia, Sud América y Nueva Zelandia. La fábrica de fieltros posee un telar de 680 pulgadas que según se dice es el más grande del mundo, donde se fabrican los fieltros a anchura de 51 pies (15,5 metros), despues reduciéndose a 7,6 metros. Se fabrican fieltros de peso hasta una tonelada por ejemplo uno entregado ultimamente a la fábrica Stora Kopparberg, Kvarnsveden, Suecia, de 200 pies (61 met.) de largo y 6,1 met. de ancho. Los fieltros perduran poco tiempo, pues se someten a temperaturas elevadas, fricción y acción de bacterias y materiales químicos. La empresa ha entregado fieltros en Sud América, el Japón, India y muchos otros paises del extranjero.

EN ESPÑA SE PUEDE POCO—Cuando se firmaron los acuerdos entre España y EE. UU. para trabajos militares y ayuda económica, muchas empresas norteamericanas luego fueron de parecer que aquí se presentaba oportunidad para hacer inversiones y comercio. Empero, aparte de las construcciones mismas mas ciertos materiales comprados con fondos de la Comisión de Operaciones en el Extranjero (FOA) de los EE. UU. no se ha podido realizar gran comercio particular, debido a lo siguiente:

En primer lugar, la ley de España prohibe que ningún interés extranjero posee más del 25% de ninguna firma española. Claro que hay excepciones; en caso de la Río Tinto Mining Company, impresa minera de cobre, se declara que se permitirá hasta 49% en ciertos casos; pero en general el gobierno no concede a ningún extranjero el derecho de controlar empresas de españoles.

Segundo, el gobierno no garantiza que se permitirá pagar dividendos o repatriar capitales en moneda extranjera. Dichas negociaciones tendrán que tramitarse caso por caso ante el gobierno.

GENERAL VIEW of Pena Pobre kraft mill taken by PULP & PAPER. Bleaching of kraft pulp is newest innovation at this mill, one of finest in Mexico.

Vista de la fábrica kraft de Peña Pobre, foto PULP & PAPER. Ultimamente se inició aquí el blanqueo de pulpa kraft.

BLEACHED KRAFT NOW MADE AT LENZ MILL—Fabricas de Papel Loreto y Pena Pobre, one of Mexico's biggest and most successful pulp and paper operations, has installed and started up a new bleach plant in connection with its kraft mill at Pena Pobre, on the southern outskirts of Mexico City.

This improvement was revealed by Hans Lenz, president of the company, in a communication to PULP & PAPER. The Lenz mills make about 100 tons a day of a great variety of fine and quality grade papers, using both groundwood and kraft pulp made at its mills, and purchased woodpulps. In recent years, one of its major additions was a Rice Barton Fourdrinier machine at Loreto.

CANADA INCREASES PULP OUTPUT AND EXPORTS—In the first 5 months of 1955, Canada made 4.8% more woodpulp than last year—the total for the period being 4,079,094 tons. The greatest increase was in chemical pulps, up 125,000 tons to 1,807,686. Pulp exports were 958,672 tons, an increase of just over 100,000 tons.

BEAUNIT BRAZIL LICENSE—Beaunit Mills, Inc. and Industrias Reunidas F. Matarazzo, S. A., of Sao Paolo, Brazil have signed an agreement giving the latter company rights in Brazil to the viscose rayon continuous spinning process of Beaunit.

JAPANESE RAYON DEVELOPMENTS—About one third of the 8,900,000 lbs. of rayon filament yarn exported by Japan in the first six months of the year went to Communist China, according to the Japan Synthetic Textile Association. It was reported that about 1,900,000 lbs. of yarn went directly to China plus about 1,000,000 lbs. re-exported to China from Hong Kong.

The worldwide commerce in pulps, paper, paperboard and other forest products gives rise constantly to news of great importance to our readers. On these pages we publish such news in Spanish and English, with the view that our readers in all parts of the world will read the items easily and with profit, in one or the other language.

Del comercio mundial en pulpas, papel, cartón y otros productos forestales surgen regularmente noticias de gran interés para nuestros lectores. En estas páginas publicamos dichas noticias en castellano e inglés, pensando que así nuestros lectores en todas partes del mundo leerán los informes con facilidad y provecho, en un idioma o el otro.

WATER TREATMENT BASIN at Pena Pobre kraft mill of Lenz properties, with piles of wood, 2, 4 and 8 ft., in background. Stone fire walls cut down the insurance.

Una sequoia trasplantada de Oregon, EUA, crece en el jardín del hogar Lenz, intra muros de la fábrica de Loreto cerca de Mexico.

HANS LENZ, President of Fabricas de Papel Loreto y Pena Pobre, S.A. His father, who came from Germany, founded the company, now directed by three of his sons.

Sr. Hans Lenz, presidente de las Fábricas de Papel Loreto y Peña Pobre, SA. Su padre, nacido en Alemania, fundó la empresa que ahora queda a cargo de tres de sus hijos.

KRAFT BLANQUEADO DE PEÑA POBRE—Las Fábricas de Papel Loreto y Peña Pobre, que son de las más grandes de todo Mexico, tienen en pleno funcionamiento una planta nueva de blanqueo para la fábrica de papel kraft en Peña Pobre, cerca de la capital de Mexico. Así nos comunicó particularmente el Sr. Hans Lenz, presidente de la empresa. La fábrica produce cerca de 100 toneladas diarias de papeles de alta calidad y de muchas clases. Se usan pulpas tanto elaboradas en la misma fábrica como compradas. Hace pocos años se instaló en la planta una máquina Fourdrinier marca Rice Barton.

ADELANTE EL CANADA—Durante los primeros cinco meses de 1955, en el Canadá se fabricó el 4,8% más pulpa que en el mismo período de 1954, siendo el total 4.079.000 toneladas. Las pulpas químicas fueron las de mayor aumento, ascendiendo 125.000 toneladas hasta 1.807.686. Se exportaron 958.672 toneladas, aumento de más de 100.000.

BEAUNIT EN BRASIL—La Beaunit Mills Inc. e Industrias Reunidas F. Matarazzo, S.A., de Sao Paulo, Brasil, han firmado un acuerdo dándole a las Industrias Reunidas los derechos en Brasil de producción según el proceso Beaunit de hilado contínuo de rayón viscoso.

RAYON JAPONES—Dice la Japan Synthetic Textile Association que aproximadamente la tercera parte de las 8.900.000 libras de lana de hebra de rayón exportó el Japón durante los primeros seis meses de 1954 se enviaron a la China Roja. Se declara que cerca de 1.900.000 libras se exportaron directamente, y además cerca de 1.000.000 libras reexportadas por vía de Hong Kong.

How Kraft Mills Are Improving Pulping

Southland boosts alkali and makes better pulp; small chips used at Bathurst; Covington quick cooks.

• A thorough investigation which led to new production standards and improved batch pulping production methods at Southland Paper Mills, and new investigations into the mechanism of cooking, highlighted the Fourth Annual Pulp and Paper Conference in December on the University of Florida campus.

The conference was also sparked by a lively questioning of speakers, with accent on operation of continuous digesters. High interest was also shown in tests on penetration of chips during cooking.

More than 70 papermen from the South's top mills attended the two-day session, hosted by Dean Joseph Weil, of Florida's College of Engineering and members of his staff.

Speakers included M. N. May, chief of Pulping Section, Institute of Paper Chemistry; Jesse Bradbury, administrative assistant, Technical Dept., Southland Paper Mills, Inc., who gave a paper authored by Fred W. Bishop, Southland's chief chemist; Jack Limerick, research director of the Bathurst Power and Paper Co., in Canada; William J. Nolan, of the University's engineering staff; James M. Loving, of West Virginia Pulp and Paper Co. at Covington, Va.; and Lee Eberhardt, of Bauer Bros. Co. Harry Weston, secretary-treasurer of the Supts. Assn., was chairman of the conference.

HOW SOUTHLAND INCREASED PRODUCTION—Mr. Bradbury unveiled slides showing how the Lufkin, Tex., mill boosted total production and improved production methods on kraft board and bleachable grades. A significant fact shown on the light screen was that active alkali was boosted from 5,000 to 5,300 pounds per digester despite the fact that total volume of liquor was reduced.

Before Southland's program was put into effect, active alkali ran to about 4.81 lbs. per cu. ft. at the beginning of the cycle, 3.25 at the end. In the new system, the active alkali per cu. ft. is 5.58 at the beginning and 3.65 at the end. This increased alkalinity decreased cooking time one-third and increased production 50%. Yield was increased 8 to 8.3 tons per digester and the cooking cycle was slashed from three to two hours.

FUSILLADE OF QUESTIONS. That's what happened at University of Florida, at round table on pulping. W. J. (Bill) NOLAN, U. of Florida, is standing behind dias. Starting at left, the panel members around table are: J. McK. LIMERICK, Bathurst; JESSE BRADBURY, Southland; HARRY WESTON, Chairman; JAMES LOVING, West Va. P & P, Covington Mill; EDWARD LAW, JR., Waldorf Paper Products.

JOSEPH WEIL, Dean of College of Engineering, University of Florida, welcomed the mill men.

In addition, Southland obtained a significantly improved pulp which stood up under refining very nicely with relatively small loss in tear issue. Bradbury expressed the opinion that improved quality of pulp is due to reduced cooking time and limited time of exposure to alkali. It is clear, he said, that this shorter cooking time could be achieved only by higher concentration of alkali which in turn was made economically possible by reduced volume of cooking liquor per digester.

NEW TESTS ON COOKING—In his remarks, Dr. Nolan said that the objective of his investigation was to add new information on the mechanism of cooking. He defined rapid cooking as production of pulp in 30 min. or less. In such a system, temperature and concentration of chemicals must be higher and size of chips smaller than in conventional cooks.

Dr. Nolan expressed the opinion that the conventional penetration theory should be discarded and should be substituted by a "moving interface theory." He reported on experiments carried out with 2-in. pulp blocks which were pulped and sectioned to investigate the extent of lignin removal. The sections sliced from the cubes showed clearly that lignin existed in wood cubes and penetration of the cubes must be accomplished by the liquor eating its way through the lignin located between the fibers.

He said wood smaller than 10-mesh size and used in kraft pulping causes low tearing resistance in pulp. Small particle size wood was produced successfully by shredding and successive screening.

HIGH YIELD PULPING AT BATHURST—In a review of work by Bathurst Power & Paper Co., Research Director Limerick said: "For one to make high yield kraft pulp the problem is mainly how to obtain uniformity in cook." Mr. Limerick emphasized uniformity throughout his talk.

Raw chips, he said, cause losses by increasing the quality of screened rejects and by interference in performance of refiners. Pre-treatment of wood chips is important in order to accomplish complete penetration. This pre-treatment can be carried out by steaming either by one of the established commercial processes or by simply steaming chips while they are being put into the digester plus a very short steaming to 5 lbs. per sq. in. pressure with cover on. Cooking liq-

PRESENTED PAPERS AT FLORIDA. JESSE BRADBURY (left), who presented the Southland Mills' report on improved batch pulping operations, and MALCOLM N. MAY (right), formerly of Champion Paper & Fibre, Houston, Tex., and now at Institute of Chemistry, who reported on their experiments.

AT FLORIDA MEETING. LEE E. EBERHARDT (left), of Pulp Machinery Dept., The Bauer Bros. Co., to Southern audience of new Grenco continuous digester on West Coast and batch rapid cycle digester.
FRED W. BISHOP (right), Chief Chemist, Southland Paper Mills, wasn't there, but he authored a paper on improved production methods, read by a colleague.

uor should be added after steaming pressure is relieved and without removing the cover. Black and white liquor should be pre-mixed for uniformity.

Uniformity should also be maintained in size of chips. Smaller chips, said Mr. Limerick, are easier to penetrate.

He said the appearance of 65% high yield pulp is very similar to conventional soft kraft pulp although, by necessity, it must be hard due to high lignin content. High yield kraft pulp (coniferous) refines without difficulty in brown stock refiners with very moderate power requirements (3.7 hp per day per ton).

This gently refined kraft pulp washes very nicely due to the limited extent of refining and limited drop in freeness, he said. Detailed information was also given on physical and chemical properties of three kraft pulps in unbleached and bleached condition. The three pulps had 19.2, 16.2 and 2.9 chlorine numbers.

CONVENTIONAL ASPECTS OF PULPING—Dr. May told of experiments at the Institute on liquor-wood ratios, showing active alkali has to be increased with increased wood ratio. They also showed that increasing the circulation rate once the rate has reached a sufficient speed for uniform mixing, is no longer beneficial and serves no useful purpose.

QUICK COOK AT COVINGTON—Jim Loving, of West Virginia's Covington, Va., mill described developments, from about 1945 to present, experienced at the mill in the manufacture of 9 pt. corrugating medium by a continuous quick-cook process. He spoke of feeding wood chips from an area of atmospheric pressure to an area of high pressure and experience with screw feeders and rotary valves of different size and design.

Final speaker was Lee Eberhardt of Bauer Brothers, who discussed briefly, two types of equipment: A continuous digester on the West Coast and a batch-operated rapid cycle digester developed recently by Bauer Brothers in Ohio. His subject was "The Grenco and Rapid Cycle Digesters."

W. B. Morehouse Named Vice President of Nopco

Walter B. Morehouse has been elected vice president of Nopco Chemical Co. in charge of all industrial sales. Formerly he was manager of Nopco's Paper Chemicals Division.

Top Men in Gaylord Subsidiary
EDWIN J. SPIEGEL (left), former President, is Board Chairman, and VERTREES YOUNG (right), is President of the newly incorporated Gaylord Container Corp., wholly owned subsidiary of Crown Zellerbach Corp. Mr. Young, a trained forester, had for years been Exec. Vice Pres. of the Bogalusa, La., operations. JOSEPH M. ARNDT, of St. Louis, who headed sales for many years, is now Executive Vice Pres., and these three are the Executive Committee for the new subsidiary. WM. L. MEYER is Vice Pres. and Treas. and CLAIR S. CULLENBINE, Secy. General offices continue in St. Louis.

Weyerhaeuser Officials Tour Alaska Forests

J. P. Weyerhaeuser, Jr., president, Howard Morgan, vice pres., and pulp division manager, and C. D. Weyerhaeuser, forestry, timber & lands division manager, all of Weyerhaeuser Timber Co., recently toured Southeastern Alaska. They went to Sitka with Art Greeley, regional U. S. forester. They also visited logging operations of Ketchikan Pulp Co. and visited the mill at Ward Cove.

	For Domestic Use		For Export		Total	
	1955	1956	1955	1956	1955	1956
Paper excluding Newsprint and Building Papers	11.18	11.40	.28	.45	11.46	11.85
Paperboard	13.05	12.80	.39	.45	13.44	13.25
Newsprint	1.27	1.45	.23	.25	1.50	1.70
Building Paper and Board	3.05	2.80	.05	.10	3.10	2.90
Totals	28.55	28.45	.95	1.25	29.50	29.70

U.S.A. Estimated Production in 1955—Forecast for 1956

Exports, Production and Profits Forecast

Here is another forecast for 1956. Here are calculations by Louis T. Stevenson, economist for Tucker, Anthony & Co., New York, and former economist for APPA. The table shows estimated final figures for 1955 and forecasts for 1956.

He foresees a considerable increase in paper and paperboard exports. He expects domestic U.S. consumption to drop slightly in paperboard and building board and, slightly, in total paper and board. But with exports climbing, he expects a net increase of less than 1% over 1955 production.

Capacity will increase faster than production, lowering capacity to production ratio to a more normal 94.3%. The estimated ratio was 96.7% in 1955, it was 91.4% in 1954.

Profit before taxes will be 16.7% of sales in 1956, he says, as compared with 18.2% in 1955, 15.9% in 1954.

Georgia Sites . . . Alaska Sale More Expansion . . . Mergers

PAPER MILL SITES IN GEORGIA?—Two companies are looking for new mill sites in Georgia or in nearby areas, according to a prominent Georgian who has been advising with them, seeking to be of assistance.

ALASKA SALE JAN. 25—Informed sources expect there will only be one bidder—Japanese-owned Alaska Lumber & Pulp Co.—when the Forest Service auctions off the Sitka, Alaska, pulptimber unit on Jan. 25. Financing for half of the $50,000,000 needed is being undertaken in eastern U. S. financial centers. Latest rumors are that it is going to succeed. Probably for a 300 ton dissolving pulp mill.

NEW ZEALAND EXPANSION—New Zealand Forest Products will spend up to $28,000,000, virtually doubling production. A new kraft paper mill will make 20,000 tons a year; present paper mill will increase from 24,000 to 30,000; kraft pulp output goes up from 50,000 to 65,000 tons, ultimately to 100,000; Multiwall bag output will total 25,000,000 annually; board and sawtimber will be increased. A U.S.A.-made bandsaw mill and other equipment are ordered. Sir David Henry, managing director, was in the U. S. recently.

BIG TIMBER SURVEY IN BRITISH COLUMBIA—Reports of "a big timber survey" in the Upper Fraser country of British Columbia stirred talk in that province of another possible pulp mill proposition. Prince George and Quesnel have long been likely sites.

BIG NEWSPRINT INCREASE IN SOUTH—Bowaters Southern, Coosa River and Southland Paper Mills will boost newsprint production from 430,000 to 770,000 tons a year, said Rep. Klein (D.-N.Y.) after a tour of the South, but he overlooked the big new machine also going in at I.P.'s Mobile mill.

SCOTT MAY BUILD IN NOVA SCOTIA—Scott Paper Co. is undertaking a survey to determine feasibility of establishing a $35,000,000 bleached sulfate pulp mill in eastern Nova Scotia in the Canso Strait area. Merger with Hollingsworth & Whitney brought Scott 300,000 acres of forest land in Nova Scotia.

NEW GROUNDWOOD MILL—A groundwood mill near Sherbrooke, Que. for Lafayette Pulp & Paper Co., plans production of 50 to 60 tons daily, starting in February.

PORT ALICE TO BE BIGGER—Alaska Pine & Cellulose will spend an additional $6,000,000 on its Port Alice sulfite mill, making current total investment there $11,000,000. A couple of years ago the company spent $9,000,000 on the same mill. A new pulp drying machine and finishing room are planned.

MIAMI MILL EXPANDS—Miami (Fla.) Board Mills has added 21 dryers to its 80-in. 50 tons a day cylinder machine. Also new screens, three Noble & Wood jordans and three new pulpers, bringing output about 15 tons.

BIGGER MILL FOR VANCOUVER ISLAND—Planned size of new B. C. Forest Products Ltd. kraft pulp mill, Crofton, B. C., partly owned by Scott Paper, has been boosted to 425 tons per day. Production is to start in early 1958.

SALES RECORD FOR ST. REGIS—A $300,000,000 sales record for St. Regis in 1956 seems likely, with earnings around $4 a share, says Wall St. Journal. It said earnings of $250,000,000 to $350,000,000 in 1957, with earnings of $5, were "a strong possibility." Early in 1957 the Alberta pulp mill and Jacksonville No. 2 machine are to start up.

GEORGIA PACIFIC PLANS—It is no secret in informed circles that interests with pulping experience and pulp marketing facilities will tie in with Georgia Pacific Plywood when it gets ready to build its 500-ton Alaska mill and its pulp investment in Oregon. In Alaska, it has until July 1, 1959 to order principal equipment. Owen Cheatham, president of G-P, has told friends he considers Alaska the most favorable timber area in the non-Communist world, after surveys in many areas including Latin America.

ANOTHER MILK CONTAINER PLANT—Tenth such plant for International Paper is announced for Turlock, Calif., to serve eight western states. J. A. Hacke, supt. of Youngstown, O., plant, will be resident mgr.

NEARLY 70 MERGERS IN PULP AND PAPER—Mergers trend continues: Minnesota Mining & Mfg. buys Hartford City (Ind.) Paper Co. . . . Albemarle Paper Mfg. Co. of Richmond, Va., plans purchase of Raymond Bag Co., Middletown, O. . . . Pabco Products Inc., San Francisco, completes financing to buy out Crown Z interest in Fibreboard Products, giving Pabco full ownership. . . . Sutherland Paper Co. completes purchase of Ft. Orange Paper Co., Castleton-on-Hudson, N. Y., with $6,000,000 annual sales. . . . Mead Corp. stockholders okay acquisition of Chillicothe Paper, 1½ Mead shares to one Chillicothe. . . . St. Regis acquires a 40% interest in Growers' Container Corp., Salinas, Calif., which makes fiber containers and flexible package. . . . Rumors were flying around the Middle West at press time that a Michigan company would be merged into a Pennsylvania paper firm.

Full Turnout for Rayonier at Southeastern TAPPI Meet

"GANG'S ALL HERE" from Rayonier as this picture shows. Rayonier had turnout second only to host mill, Georgia Kraft. Left to right: Jesup Office Mgr. W. P. JOYNER; E. P. WILSON, JR., Asst. Chief Chemist at Fernandina Mill; W. R. ADAMS, Bleach Plant Supt.; L. C. BURT, Chemist; BOB OPFERKERCH, Chemist; G. A. PURDY, Proj. Engr. and G. STERLING BAILEY, Plant Supervisor, all from Jesup.

"The use of Dirtecs has completely eliminated particles of metal and glass which constituted a serious hazard because they cut the hands of the people handling the finished stock in the mill and at the converter's."

Manager, Board Mill

"Dirtecs are removing four times as much dirt, both mineral and organic, as we expected."

Mill Superintendent

"Machine wire life has increased 30-60% as a result of the protection from dirt afforded by Dirtecs."

Manager, Kraft Mill

"Not a day went by but what we used to have reams and reams of second grade paper from the machine because of high dirt count. Now, since we installed Dirtecs, we just do not have any second grade sheets because of dirt count."

Superintendent, Book Paper Mill

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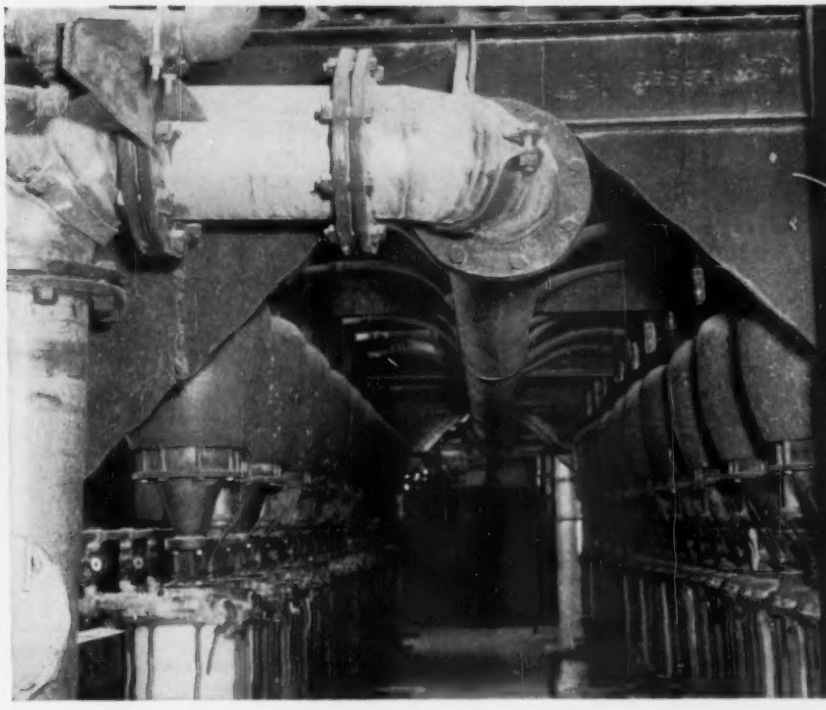

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This neat battery of twenty Dirtecs is taking the dirt out of bleached kraft in a big Southern Mill.

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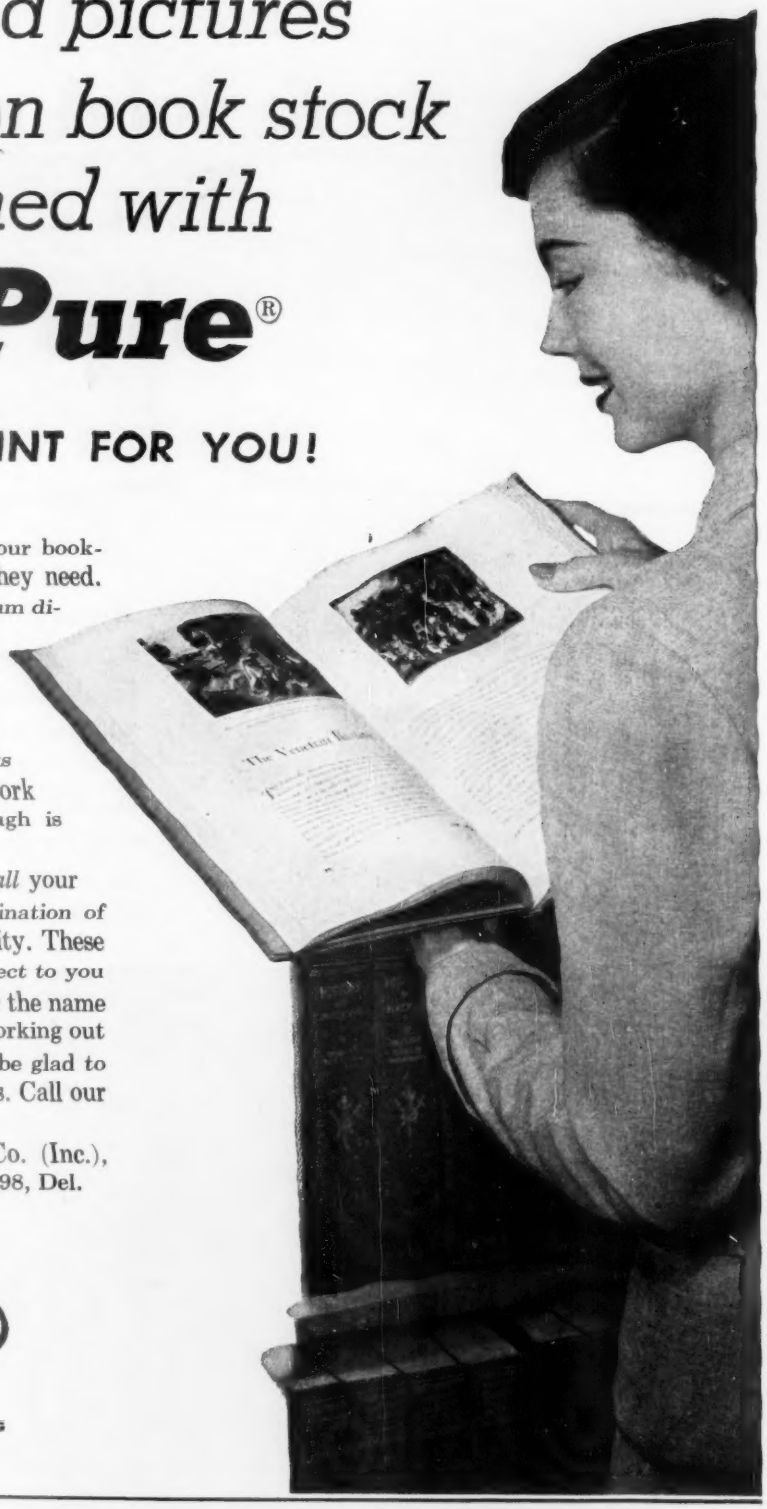

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UNDER THE LIGHTS (left) in late evening session of Southeastern Tappi, EARL CLEATON of Herty Foundation reads paper on use of microscopy for predicting paper making properties, prepared in conjunction with Lenore Saydah, also of Herty.

REPEAT PERFORMANCE (middle). HOWARD FARRELL, Res. Engr. at Crossett Paper Mills, repeats paper on underwater storage of pulpwood at Bowaters and Crossett, given at Houston engineering meeting of TAPPI (see Dec. issue PULP & PAPER).

ANOTHER REPEATER (right). GEORGE M. FERENCE (standing left) and T. L. GILLES, (kneeling) of Brunswick Pulp & Paper Co., repeated successful paper on deterioration of straw-piled pulpwood, first presented at Alkaline Pulping Conference in Chattanooga. EARL CLEATON is shown with them.

Wood Cost Facts—and Southern Fiber

Herty Lab discloses first info on longleaf pine tests, Wood cost on weight basis, $6 a cord less in the South

• Successful use of microscopy to determine the correlation between fiber dimensions and over-all physical strength of paper was described by members of Herty Foundation at the Southeastern TAPPI meeting in mid-November in Macon, Ga.

A description of methods used to check wood costs on a weight basis, presented by Roy L. Miller, of St. Regis at Pensacola, Fla., also highlighted the session.

Two other papers were repeated at Macon by what might be termed "popular demand"—"Deterioration of Straw-Piled Pulpwood" by George Ference and T. L. Gilles of Brunswick Pulp & Paper, given at the Alkaline Pulping Conference in Chattanooga, and an engineering appraisal of the underwater wood storage systems at Bowaters and Crossett mills, first made at the Houston Engineering Conference and presented in Macon by Howard Farrell of Crossett (both covered in PULP & PAPER, Dec. 1955 issue).

Staff from Georgia Kraft mill in Macon were hosts at the five-hour Macon meeting. Res. Mgr. J. A. May and Prod. Mgr. William M. Ebersole topped a delegation of some 20 staffmen on hand to greet about 100 guests.

The morning after the meeting, TAPPI members were escorted on a tour of the Georgia Kraft mill (pictures and complete story of this mill in Dec. 1955 issue of P&P).

USING MICROSCOPY TO PREDICT PAPERMAKING PROPERTIES—Object of the Herty study on use of microscopy was, first, to determine actual dimensions of fibers found in various sections of the Southern pine tree and, second, to find the correlation between these dimensions and over-all physical strength of paper.

Fiber dimension study was used to obtain background data on the original fiber size from various sections of the tree before fiber was subjected to beating or refining. A longleaf pine growing about 25 miles west of Savannah served as the guinea pig in this series of investigations. The tree—some 46 years old, 60 ft. tall with diameter of 15 in. (breast height)—was uprooted by a tractor so roots could also be used in the experiment.

After being cut into 4 ft. lengths, with each piece marked where it had been cut from, the entire tree was taken to the Herty lab where it was debarked by hand, put through a 4-knife Carthage chipper and then screened. Once screened, chips were cooked in a 5-lb. stationary digester with kraft liquor. Cooking conditions were kept as nearly constant as possible. A wine press was used to squeeze excess liquor from the chips and they were then run through a Rice Barton Dynopulper to disperse fibers.

TEST SHEETS MADE FROM FIBERS—Samples for burst and tear tests were taken when the pulp reached 500 and 400 ml Canadian Standard freeness. The handsheets, at 40 lb. ream weight, were made on Noble & Wood handsheet equipment and the test sheets were conditioned overnight at a temperature of 72° and relative humidity of 50%. Next day, burst and tear tests were made.

Samples of pulp from various sections of the tree were now analyzed for fiber dimensions. By careful manipulation, approximately 25 fibers were deposited on each of eight slides. At least 200 fibers were measured for each sample.

Once water had been evaporated, each slide was placed on a projektina, which projects an image of the fiber, magnified 10 times, on a ground glass screen. Then the length of each fiber was determined to the nearest .1 mm.

After that, slides were transferred to the platform of a binocular microscope and fiber widths determined to the nearest .001 mm.

AVERAGE DETERMINED—By dividing the average fiber length by the average of fiber widths, the length/width ratio of pulp from each section of the tree was determined. Earl Gleaton, who presented the Herty paper, said this system of determining widths and lengths has been used at the Herty Foundation for nearly two years on more than 28,000 bamboo, hardwood and pine tests and is low on probability of error.

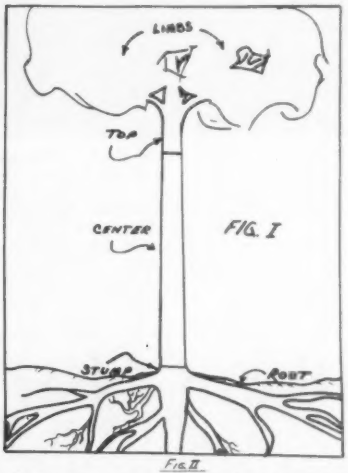


FIG. I

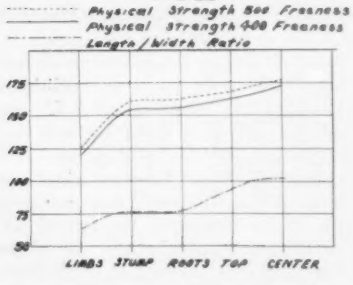
FIG. II

Section	Burst Factor		Tear Factor		Average	
Freeness	400	500	400	500	400	500
Center	88	96	258	278	173	177
Stump	141	157	152	166	136	161
Top	126	122	200	214	163	168
Limb	108	104	132	144	120	125
Roots	148	141	169	187	159	164

FIG. III

Section	Avg. Length (mm)	Avg. Width (mm)	Length/Width Ratio
Limbs	1.72	0.027	63.8
Stump	2.93	0.038	77.1
Roots	2.50	0.032	78.3
Top	2.52	0.028	90.0
Center	2.76	0.026	106.1

FIG. IV



FIRST REPORT ON HERTY TESTS—Results of microscopy tests are shown in these diagrams. **Fig. I** shows sections of trees used in the tests. **Fig. II** shows results of burst and tear tests on handsheets. **Fig. III** is results of the fiber dimension analysis. **Fig. IV** shows comparison of fibers from different sections of tree tested by Herty staff.

RESULTS OF THE TESTS—As a result of the test, it was shown that the longest fiber in the tested tree was found in the stump. Fibers were also wider and thicker in this section. The length-width ratio and the average of the mullen and tear, however, were proportionately lower than in other sections. Gleaton pointed out, once again, that even though fiber found in the stump is longest it does not necessarily produce paper with the best physical strength. He said, however, that tests showed when the length-width ratio went up, over-all physical strength also went up.

Good paper was made from all portions of the tree including limbs and roots.

CHECKING WOOD COSTS ON WEIGHT BASIS—Roy L. Miller, formerly at Deferiet and now at St. Regis' Pensacola mill, used relative cost data in describing results of checking wood costs on weight basis. The figures produced by this system were surprising, according to several TAPPI members.

Relative costs of wood per cord, used in these comparisons, was $24 in the South, $31 in the Northeast and $36 in the North Central states. The solid volume was determined by displacement in water and it was determined that in the South volume was 97 ft. per cord, in the Northeast, 109.2 ft. cord and in the North Central, 97.7 ft. cord.

According to Mr. Miller, the adjusted volume factor then becomes $30 in the Northeast and $31.70 in the North Central, with the Southern price remaining constant. In another test, entire loads were weighed and dried. Adjusted cost then proved to be $31.50 in the East, $33.90 in the North Central.

In experiments with chips, it was noted that density decreases sharply as moisture decreases. It is believed that loss of weight, therefore, could result from evaporation.

Mr. Miller pointed out that valuable time could be saved in determining wood costs through weight if density could be determined from chips. He also described several short cuts to obtain volume.

W. C. (Bill) Chapman, of Union Bag & Paper Corp., vice chairman of Southeastern TAPPI section, conducted the meeting in the absence of Chairman Charlie Rogers. Next section meeting will be at the Francis Marion Hotel, Charleston, S.C. in Jan.

GEORGIA KRAFT HOSTS—J. A. MAY, Res. Mgr. at Macon mill (left) and WILLIAM M. EBERSOLE, Mgr. of Prod. at Macon (center), discuss industry news with one of first TAPPI guests to arrive, BOYD P. ELLEN, Southern Paperboard's Pulp and Power Supt.

HOSPITALITY HOUR brings together ASA HOSMER, Duriron Chemical Co., Y. S. HOGG, of Allis-Chalmers, R. A. GALLOP, Plant Engr. of Georgia Kraft, and C. E. (SHINE) JACKSON, Paper Mill Supt. of Union Bag and W. S. (PAT) YUNKER, Atlanta rep. for E. D. Jones & Sons Co.

ALBANY FELT GOES SOUTH. St. Stephen, point of a triangle, with the great papermaking centers of Georgetown and Charleston, S.C., at the other corners, is site for new Albany felt plant in the South.

Albany Begins Making Felts in South in May

Work has started on a new $2,000,000 Albany Felt Co. plant in St. Stephen, Berkeley County, S. C., to start delivery of felts next May. Lewis R. Parker, president, says this fourth Albany plant will increase the company's capacity of paper machine felts an estimated 20%, and provide faster and better service for mills in the south.

The new plant on a 112-acre site, will utilize modern, one-story construction, air-conditioned throughout, and will incorporate efficient in-line production of paper machine felts.

Robert Sloan is to be plant manager, and Charles Michaels, mill superintendent. Both are from the Albany, N. Y., plant. Virtually all other personnel will be drawn from the immediate area. Construction will be by Daniel Construction Co., Greenville, S. C., under supervision of Ralph Wood, Albany's assistant chief engineer.

Bowaters Plans New Fibreboard Plant

A new fibreboard plant to produce at least 120 million ft. a year will be constructed by Bowaters Southern Paper Corp. at Calhoun, Tenn.

The plant will be in operation within two years, according to Sir Eric Bowater, chairman of the board of the firm, and will be constructed adjacent to the present paper mill at Calhoun. Thus, the new mill will make use of more of the wood resources. Output of the Calhoun mill, which presently is producing 200,000 tons of newsprint and 65,000 tons of sulfate pulp, will be boosted by a third machine to 300,000 tons of newsprint by fall of 1956.

ROME KRAFT LEADERS FETED BY CITY, FEDERAL LEADERS: Mead and Inland Container executives are shown here at November industrial gathering to salute Rome Kraft mill, Rome, Ga., jointly owned by the two companies. Left to right, SYDNEY FERGUSON, Chairman of The Mead Corp. Board; HERMAN C. KRANNERT, Chairman of Inland Container; GEORGE H. MEAD, Honorary Chairman of Mead; HERBERT A. KIDD, Vice Pres. and Gen. Mgr. of Rome Kraft; AL H. MAHRT, Vice Pres. of Mead Corp.

Government, Leaders Turn Out in Tribute to Rome Kraft

A grateful city of Rome, Ga., set aside two days in November to pay tribute to leaders in the paper industry instrumental in the tremendous growth of the city.

Honored by city and by U.S. Senate leaders were George H. Mead, honorary chairman of the board of Mead Corp., and Herman C. Krannert, chairman of the board of Inland Container Corp. Executives of both companies were on hand for a testimonial luncheon and tour through Rome's big, new mill, operated jointly by the two companies. (Full story of Georgia Kraft's Rome Kraft Mill was in PULP & PAPER, Dec., '55 issue.) A special train from Cincinnati brought many visiting business leaders.

Georgia's Walter George, senior Senator of the U. S. Senate, commended "the men responsible for bringing these business leaders to Georgia." He said: "I'm thankful for men like these (Mead and Krannert) who, I believe, are typical of the progressive spirit of this city and state."

Sen. Homer E. Capehart (R-Ind.) also saluted the two industrial leaders.

PRESIDENT GAYNER of Brunswick Pulp & Paper took on "all comers" in this unique conference. Many questions in minds of employes were freely answered by him, concerning company policies and plans.

Gayner Answers All Questions for Employes

Something new in the way of a press conference, President E. J. Gayner, III (center) of Brunswick Pulp & Paper Co., held a round table parley recently with company's part-time "reporters."

They are staff members of the monthly magazine Pine Chips, produced at Brunswick. Mr. Gayner answered any and all questions fired at him by staff members who contribute to the publication, thus getting into print the answers to many questions in the minds of company personnel, which might never have been asked.

Southern Paper Industry 100 Years Ago!

The paper industry began in the South before the Civil War. Remains of a long idle paper mill still stands on Sope Creek, Marietta, Ga., with a companion covered bridge, built in 1855.

The Columbus, Ga., Enquirer urges that both be preserved as a monument to the Southern pulp and paper industry.

Back in 1855, when the Marietta mill started up, it editorialized that "as good paper can be made in Georgia as in New York."

FIRST IMPRESSIONS ARE "LASTING," says boy-and-girl cartoon. REGINALD HAIGHT, Training Director, Crown Zellerbach, Camas, Wash., stressed need to make worker feel at home from his first day on the job.

HOW SCOTT TRAINS SUPERVISORS. BEN HAUG, Production Manager, Scott Paper Co., Everett, outlined methods for giving on-the-job training to supervisors, the "key men" in management's relations with operating men.

How Camas Mill Inducts a New Employe

Scott Paper Co.'s procedure in training "front-line" supervisors also is revealed at Tacoma meeting

● How Crown Z's Camas mill indoctrinates a new employe—how Scott trains key men—these were highlights of a Tacoma, Wash., Dec. 2-3 annual meeting of the Pacific Coast Superintendents.

Jack Savage, sulfite pulping and bleaching supt., Crown Zellerbach, Camas, was moderator. He called personnel work in the 1930's "a mad scramble" that brought forth weird schemes. But now, he said, it has taken on new stature.

HOW CAMAS TREATS NEW MAN—Reginald Haight, training director for CZ, Camas, said impressions of the first days on a job are lasting ones and should be made pleasant and inspiring. This is the job of supervisors and managers, Mr. Haight stated.

He described the Camas "induction" routine and said it has made a hit with supervisors personnel. Benefits, outlined by supervisors themselves, are: (1) Relief of tenseness and puzzled feeling; (2) acquaintance with foreman, shop steward, safety committeeman; (3) knowledge of housekeeping policy right at start; (4) understands safety program better; (5) learns importance of quality program; and (6) knows what's expected of him.

Mr. Haight said the plant tour for new men is vital. Inadequate induction results in uneasiness, discouragement, possible accident proneness. It is also linked to tardiness and absenteeism, slowness in learning, waste, off-quality and hard feelings.

HOW SCOTT TRAINS KEY MEN—One of the greatest personnel challenges in this industry was met by Scott Paper Co., which started up four new paper machines and took on 650 new employes in two years at Everett, Wash. A. J. (Ben) Haug, production manager, said, "The front-line supervisor (i.e., the foreman or shift supervisor) represents management to employes 24 hours a day. Training this key man is part of a continuing process."

Scott supervisors' on-the-job training is administered in discussion-type group meetings (notes saved for follow-up), dinner meetings, weekly meetings for all operating personnel where the subjects are chosen by workers and supervisors answer questions.

Mr. Haug said dinner meetings help keep supervisors informed of company costs, quality position (and how to improve), goals, overall plans and production.

No company can attract qualified young workers or advance good men until it sets standards as to its own management, said Dr. Dee L. Snyder, industrial counselor. He said pulp and paper requires greater teamwork than other industries because of its diversity. He said people with high aptitudes should be grouped together for greater team effort, and management must know its people better by spending more time with them.

Research into solar energy, nuclear energy, sea water and silicon products will bring amazing new developments, predicted Dr. Jesse E. Hobson, director of Stanford Research Institute.

ROUND TABLE TALK ON PULPING AND PAPERMAKING—Tom Grant, Publishers' Paper Co. sulfite supt., led a panel discussion on sulfite pulping. The problem of using press rolls on three-stage brown-stock washers was considered, and the consensus seemed to be that a light, extractor-type roll would be an improvement over previous rolls, described as too heavy. Others said they tried nearly every type of roll without marked success.

Kraft panel moderator Hugh Wickett, supt., Weyerhaeuser Timber Co., Longview, Wash., brought up the question of packing for pumps. L. D. McGlothlin, CZ, Camas, advocated slower speed pumps and said shafts and glands must be kept in good condition. A. C. McCorry, St. Regis, Tacoma (and soon-to-be supt. of new Hinton, Alberta, mill) said the trouble is not so much with the packing as it is with mechanics. He said, "If everything is not perfectly lined up, the packing will not be perfect."

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Another plant, another picture, another step in Trona's continuing expansion program in the Chemical Industry. With the acquisition of the former Western Electrochemical Company of Henderson, Nevada, American Potash diversifies into the electrochemicals field with ammonium and potassium perchlorate for aviation and guided missiles; sodium chlorate for pulp (kraft) bleaches, weed killers and defoliants; potassium chlorate for matches, flares and fireworks; and maganese dioxide for military communications and hearing aids. The addition of the Henderson operation, henceforth to be known as American Potash and Chemical Corporation (Nevada), as a partner-in-progress with the new lithium hydroxide plant of American Lithium Chemicals, Incorporated, San Antonio, Tex. gives added impact to Trona's diversification program in chemicals vital to Industry and Agriculture.

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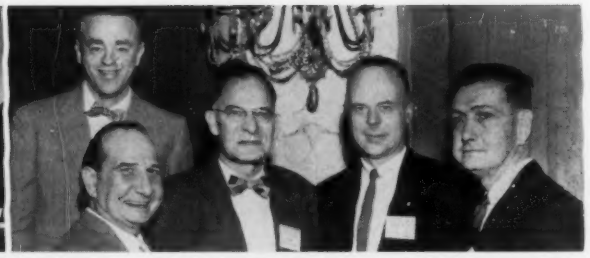
LOT OF KRAFT PULPING KNOW-HOW HERE. From left, F. THOMPSON, Weyerhaeuser, Springfield, Ore.; L. D. McCLOTHLIN, CZ, Camas; HUGH WICKETT, Weyerhaeuser, Longview; KEN SHOLD, CZ, Pt. Townsend; and A. C. "Ace" McCORRY, St. Regis, Tacoma.
Pictures by Richard Studio, Tacoma, Wash.



COAST SUPTS. LEADERS. MAX BAILEY, Westminster Paper Co. Ltd., Chairman for another year; JACK SAVAGE (behind Mr. Bailey), CZ, Camas, 1st V.C.; others, l to r, HENRY DAUTERMAN, Longview Fibre Co., 2nd V.C.; BURKE MORDEN, Morden Machines, Sec.-Treas.; and FRANK HAMILTON, Simpson Paper Co., 3rd V.C.

In the papermakers' panel, with Robert Riley, coating supt. CZ, West Linn, presiding, Charles E. Ackley, West Linn supt., told of the operating experience with free discharge centrifugal cleaners on several machines. At first, seven primary cleaners and one secondary cleaner were installed, all 12 x 2 x 2. Sewer losses were 0.3 to 0.7 tons/day.

A third stage cleaner, 3 x ⅛ x ⅝ unit, was installed and losses dropped to 0.06 to 0.07 tons per day with no apparent difference in sheet cleanliness. He said there appears to be a build-up of long shives in the system up to the screens but that it has never become a problem.

Following this first cleaner installation, more units were put into operation, one a 12 x 2 x 2 on the No. 1 machine receiving draw-downs from the screens. Another was placed on No. 9 (newsprint) for draw-downs from the screens, with accepted stock passed through a 10-plate .008 cut flat screen to take out the long shives.

Hardboard, insulating board, wood preparation and chip handling were covered by three papers in another meeting session.

OTHER EVENTS—A "Wake-'em-Up" breakfast featured a cast of International Brotherhood of Migratory Peddlers, Waiting Room No. 2 in a stirring drama. Setting was a paper mill in A.D. 2055, run completely by automation. H. R. Hussell, paper mill supt., Simpson Paper Co., was initiated as an "honorary peddler."

Max Bailey, Westminster Paper Co. Ltd., New Westminster, B.C., was reelected chairman for 1956. Jack Savage was advanced to first vice chairman (replacing J. B. Beck, now of East Texas Pulp & Paper), Henry Dauterman, Longview Fiber to second v.c. and Frank Hamilton, Simpson Paper Co., to third. Burke Morden remains sec.-treas.

About 400 attended, including wives. There were 60 mill men, 116 salesmen and other men guests.

In both 1956 and 1957, fall meetings will be in Portland, Ore.

HOW PAPER WILL BE MADE IN 2055, at traditional "Wake-'em-Up Breakfast." Note mechanical man in group. All months in work calendar on wall were X'd out. AL QUINN (center), Stebbins Engineering, is initiating H. R. "RAD" RUSSELL (in business suit), paper mill supt., Simpson Paper Co., as Honorary Peddler. Others (l to r) are RUSS VOGNILD, Hooker Electrochemical, STEVE STEPHENS, Bumstead-Woolford and Foxboro, and L. R. SHANAMAN, Penn Salt.

In West Coast News

DR. BEN T. BRIGGS (left), appointed Research Mgr. of Olympic Research Div., Rayonier Inc., Shelton, Wash., as announced by James T. Sheehy, Exec. Vice Pres. Dr. Arthur N. Parrett, Vice Pres. in charge of Research and Development, will move from Shelton to New York for closer liaison with headquarters departments. Dr. Briggs, born in Portland, Ore., received degrees at Willamette U. and U. of Illinois, joined Rayonier as a Research Chemist.

ROBERT R. EDWARDS (right), has been appointed Manager of Bag and Bag Paper Production for Crown Zellerbach, headquarters in San Francisco. He reports to Vice Pres. Peter T. Sinclair. Mr. Edwards is a Saskatchewan U. graduate, was Vice Pres. in charge of Mfg. for Crown Z Canada and before that, Mill Mgr. at Ocean Falls, B. C.

Builders of C-Z Plant

Contract for constructing Crown Zellerbach's $18 million paper mill and $2 million multi-wall bag plant at Antioch, Calif. has been awarded to Howard S. Wright Co., Seattle.

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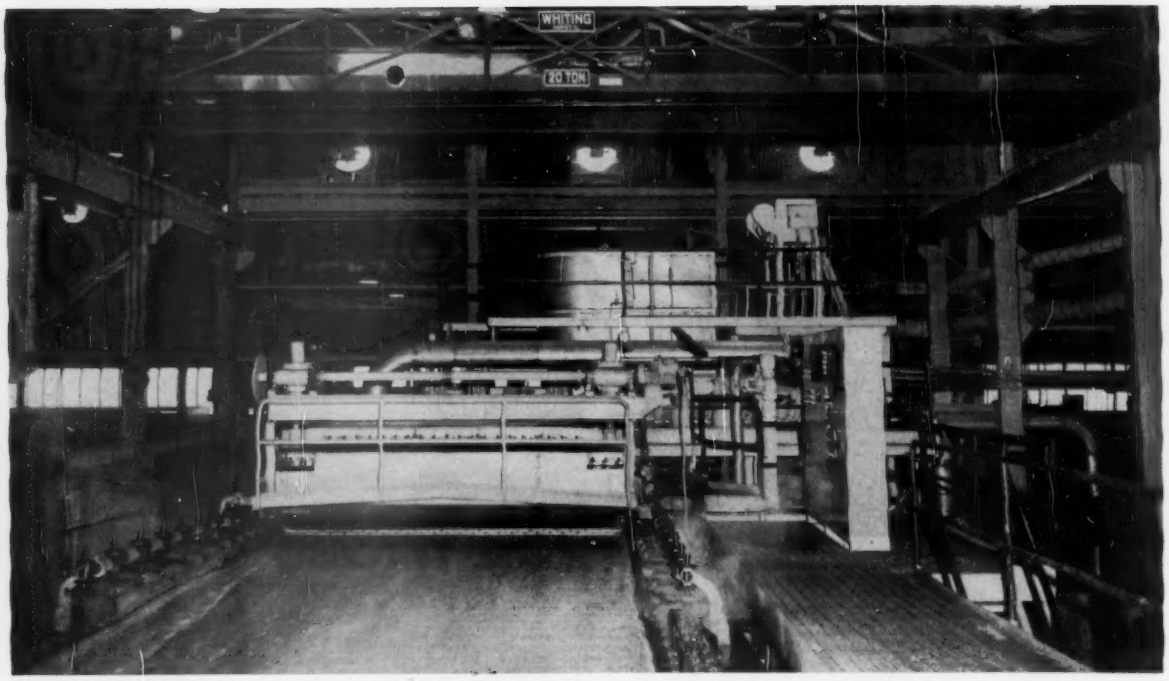


A WIDE WALKWAY ON LEVEL OF FORMING AREA. Wet end of No. 4 Beloit board machine at Longview and 165 in. wide wire. Whiting 20-ton bridge crane moving over wet end of Beloit machine.

How Semi-Chem Ties in With Kraft

Assignments of staff and operations at Weyerhaeuser Longview mill are neatly meshed for new process

● When Weyerhaeuser Timber Co.'s Pulp Division inaugurated production of 9-point corrugating medium last year in a new addition to its Longview, Wash., plant, it also made the first neutral sulfite semi-chemical (NSSC) pulp west of the Mississippi.

Weyerhaeuser, already internationally known as a timber organization and lumber producer, entered the pulp field with a calcium base sulfite mill at Longview in 1931. Now the Longview branch alone produces around 1,000 tons of pulp daily—none of it by the calcium base process. It averaged 300 tons a day of bleached magnesia base sulfite market pulp; 240 tons, bleached kraft market pulp; and 225 tons bleached kraft foodboard before the 200-ton NSSC addition started up. This new pulping section operates in conjunction with a Beloit Fourdrinier machine, rated at 200 tons per day, which started up with the NSSC pulping. (Weyerhaeuser makes 950 tons of pulp and board at three other sites and plans a 400 pulp addition by late 1957).

At Longview, the NSSC pulp addition and No. 4 machine can be used for making either kraft or NS products.

By making corrugating on the new 1500 fpm machine instead of at the Springfield, Ore., mill, as previously, the latter can concentrate on the production of heavier stock, such as linerboard, for which that mill is better qualified.

The basic reason for going to NSSC, according to R. E. Baker, manager of manufacturing-pulp division, is to provide Weyerhaeuser's box making customers with "the best grade 9-point possible." To produce this, hardwood and softwood chips are mixed about 4 to 1.

WHY LONGVIEW SITE WAS CHOSEN—An important reason for locating at Longview was that much hardwood, particularly alder, is available nearby.

Management's aim to produce top quality corrugating of high flat-crush and good runnability played a dominant role in deciding on the NSSC process. Besides, it furthers wood utilization through raising forest yields and opens up forestry opportunities.

The NSSC addition has been so arranged in relation to the previously existing kraft mill so there is utmost flexibility for producing either NS or kraft pulp and board products. Except for liquor-making, nearly all facilities interconnect.

PEOPLE BEHIND THE EXPANSION — Executives intimately concerned with expansion include officers such as Pres. J. P. Weyerhaeuser, Jr.; Charles H. Ingram, vice president and gen. mgr.; and Howard W. Morgan, vice president and manager of the Pulp Division.

Planners of the Longview expansion were R. E. Baker, manager of pulp division manufacturing; the late Gerald F. Alcorn, design and construction engineer; Dr. Harold Bialkowsky, research director; and E. N. Wennberg, Longview Pulp Division man-

ager, who heads the operations staff; and Merill Robison, engineer and assistant to Mr. Alcorn.

Key production personnel includes J. C. Brown, assistant manager of the Longview Pulp Division; A. H. Wickett, kraft mill supt.; Raymond Erickson, paperboard supt.; W. H. Haverman, sulfite mill supt.; T. W. Stewart, supt. of power; D. G. Felthous, plant engineer; Arthur E. Erickson, tech. director; H. J. Leech, tech. supt.-paperboard; J. L. McClintock, Jr., chief chemist-pulp; J. R. Callahan, asst. kraft supt.; Herbert T. Peterson, instrument engineer; LeRoy McTee, chief electrician; V. L. Mauerman, chip preparation supt.; L. L. Anderson, master mechanic. Shift supervisors include the following: Sulfite—Herman Jorgensen, Ralph Imeson, Gordon Kirkpatrick, John Jorgensen; kraft—Gerry Hough, Warren Arnold, Jim Sparks, and Erskine Ingram; machine room—Tom Quigg, Edward Karnoski, Phil Winsor and Kenneth Roberts.

Principally concerned with sale of the new corrugating medium are Keville Larson, sales manager, Pulp Division (which includes board sales), New York, and Don Seixas, who bases at San Francisco and heads up board sales.

A BIG CONSTRUCTION JOB—General contractor for the new NSSC addition was L. H. Hoffman Construction Co., of Portland, Ore. John H. Beaver was project engineer, working closely with Weyerhaeuser engineers.

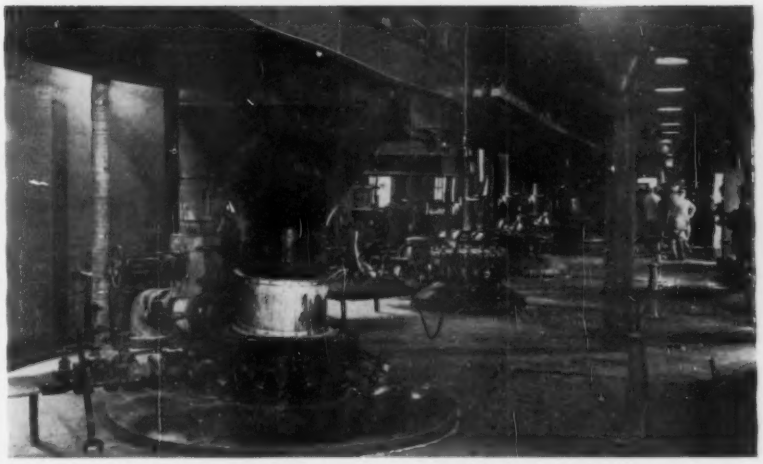
Pile driving start Feb. 15, 1954 and 307 working days later, Apr. 18, 1955, the machine started up. There were 2,001 piles driven and 6,870 cu. yds. of foundation and superstructure concrete poured. 720 tons of structural steel was required for the various structures, and also required was a total of 395 tons of reinforcing steel.

Because all the new structures, i.e.: machine room, digester building, turbine room, and washer building, tied on to existing structures, it was necessary to work very closely with the mill operators on all cut-in work. All the various piping, structural, and electrical cut-ins were done during normal mill shutdown or over the 4th of July, Labor Day and Christmas. No down time was required due to construction activities.

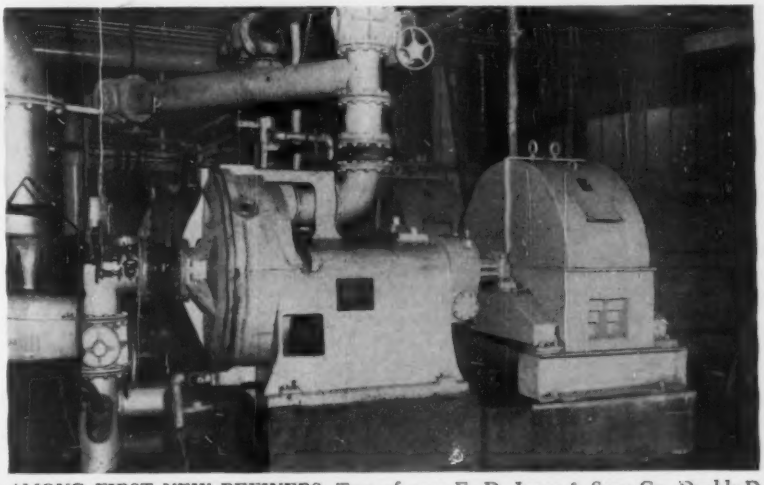
There were several abnormal construction problems:

(1) Erecting the multiple effect evaporators in an extremely confined area.

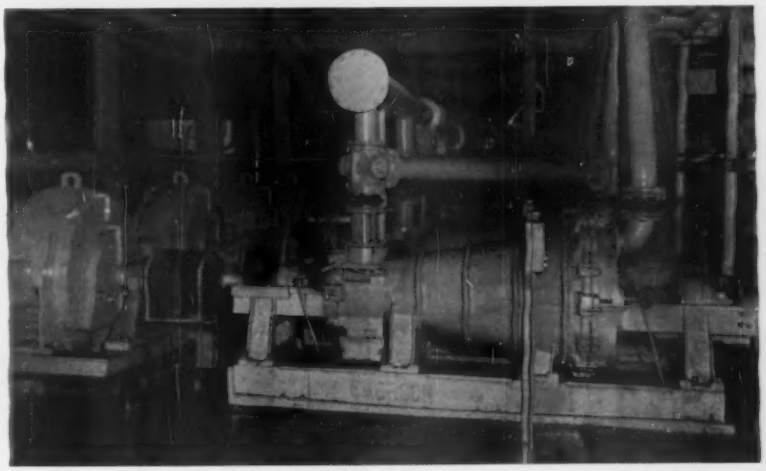
(2) Erecting two 80-ft. trusses longitudinally to the machine and removing three columns so that the Fourdrinier could be run out on No. 4 machine. This required transferring



CHARGING A NEW DIGESTER. One of two Link-Belt 42-in. shuttle conveyors in chipping position. Three Lukens clad, Chicago Bridge-build digesters, one for kraft and two for neutral sulfite semi-chemical pulp, have been added at Longview. Two blow to a new blow tank, the others blow to either of two tanks. Hanna air cylinders lift lids.



AMONG FIRST NEW REFINERS. Two of new E. D. Jones & Sons Co. Double-D Refiners are processing stock for No. 4 board machine at Weyerhaeuser's Longview addition. Each machine is powered by a 600 hp, 400 rpm Electric Products motor.



WHERE FINAL REFINING IS DONE. Ahead of new No. 4 machine. Battery of four Emerson jordans driven by Westinghouse 400 hp, 400 rpm 2300-volt synchronous motors in Weyerhaeuser NSSC refining section.

EXPANSION PLANNERS. (L to r) HOWARD W. MORGAN, Vice Pres. and Mgr. of Pulp Div., Weyerhaeuser Timber Co.; RAYMOND E. BAKER, Mgr. of Mfg. for Division, which includes paperboard production, and EDGE N. WENNBERG, Longview Mill Manager.

IN CHARGE OF SALES. In charge of sales of the new corrugating medium made at Longview are KEVILLE (KEVE) LARSON, left, Sales Mgr. of Pulp Division, which also embraces paperboard products, and DON SEIXAS, who heads Paperboard Sales, with headquarters in San Francisco. He was pictured by PULP & PAPER in Mr. Larson's New York offices.

the load of both buildings, above the operating floor, to these trusses.

(3) Slipforming the digester building concrete walls prior to the erection of the digesters and erecting three digesters in only three days.

PULPWOOD STORY—In the PULPWOOD SECTION of this issue is the story of wood handling and wood preparation for Weyerhaeuser's NSSC pulp. It's a story of how Weyerhaeuser has "reformed" the lowly alder, long a "problem child" of the western forests, developing new ideas and methods as it created its wood preparation plant.

From chip storage silos an aluminum-housed conveyor carries chips to the enlarged digester house. This is where the pulp and board manufacturing story begins.

HOW WOOD SPECIES ARE MIXED—Proper mixing and accurate proportioning of hardwood chips (principally alder) with Douglas fir chips in specific predetermined ratios is considered of prime importance. For NSSC corrugating, volume runs about 75% alder. When hardwood chips are added to Douglas fir for kraft board specialties they are used in small percentage; just enough to impart desired characteristics to finished board products.

Mixing of hardwood and softwood for both kraft and NSSC cooks is controlled from the kraft digester operating room. Each main chip transport belt leading to digesters—one from the four 700-ton softwood chip silos and the other from three 580-ton hardwood chip silos—is equipped with a Merrick Weightometer. Weightometer extension indicator controls in the digester control room are pre-set for a specific tonnage delivery by each belt. When that amount arrives the conveyors are stopped.

The rate that chips are delivered to the main belts is determined by number of chip feeders operated at given time. Chip volumes to main belts are chosen so both belts deliver allotted amounts simultaneously, thus minimizing digester charging time and making uniform mixing in the batch.

Both types of chips come together on a belt at a Link-Belt stationary tripper located one floor level above the digester operating room.

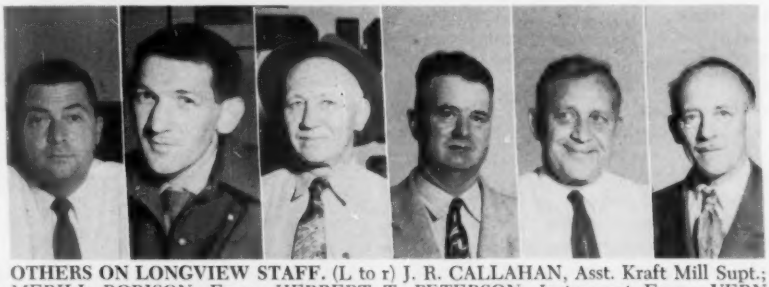
Chips of mixed species, or straight softwood chips for regular kraft, go from this tripper by belt to either of two L-B shuttle conveyors and discharge into digesters.

HOW NEW DIGESTERS OPERATE—The 160-ton NSSC pulping department, under supervision of kraft mill personnel, makes NS or kraft pulp.

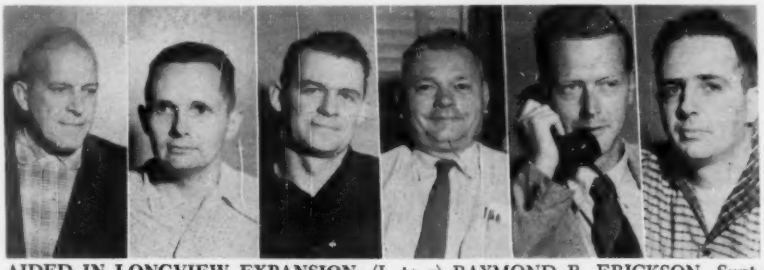
The digester building houses 12 digesters (10 kraft and 2 either NSSC or kraft. Three of these (including the 2 NS or kraft) are in an extension built as a component of the NSSC addition. The original five digesters installed were mild steel; the last seven are Chicago Bridge & Iron units with stainless cladding by Lukens, Esco circulating systems and Yarnall-Waring blow valves. Production in the three new digesters currently runs 70% NS and 30% kraft.

Digesters Nos. 11 and 12 connect

KEY MEN AT LONGVIEW. (L to r) J. C. BROWN, Asst. Mgr.; T. W. STEWART, Pulp Div. Supt. of Power; DONALD G. FELTHOUS, Plant Engr.; A. HUGH WICKETT, Kraft Mill Supt.; W. H. HAVERMAN, Sulfite Mill Supt.; ARTHUR E. ERICKSON, Tech. Dir.



OTHERS ON LONGVIEW STAFF. (L to r) J. R. CALLAHAN, Asst. Kraft Mill Supt.; MERILL ROBISON, Engr.; HERBERT T. PETERSON, Instrument Engr.; VERN L. MAUERMAN, Preparation Supt.; KENNETH H. LARKIN, Personnel Mgr.; PAUL MIESCKE, Office Mgr.



AIDED IN LONGVIEW EXPANSION. (L to r) RAYMOND R. ERICKSON, Supt. Paperboard Mfr.; H. J. LEECH, Tech. Supt., Paperboard Mfr.; J. L. McCLINTOCK, Chief Chemist-Pulp; LESLIE ANDERSON, Master Mechanic; BRUCE FERGUSON, Pulpwood Buyer; JOHN H. BEAVER, JR., Project Mgr. of Hoffman Construction Co., general contracting firm handling the Weyerhaeuser addition.

directly with a new No. 3 blow tank fabricated by American Pipe & Construction Co., a conventional kraft-type unit except that it has a special high-speed Impco agitator powered through a Pacific-Western BHV gear reducer.

No. 10 digester (kraft) blows to either No. 2 or No. 3 blow tank.

Cooks are on 3 hr., 10 min. total-length basis for both kraft and NSSC, the latter blowing at about 20% consistency (about 8-9%) with brown liquor.

HOW PULP IS WASHED AND REFINED—Stock leaving No. 3 blow tank (either NSSC or kraft) is pumped through Northwest Copper stainless steel piping to an extension of the kraft washer building. NSSC stock, arriving here as softened, practically whole chips, leaves the line via star feeders, each operating immediately ahead of a dewatering screen, a recent development of the James Brinkley Co. of Seattle. Stock not removed from the line through the star feeders recirculates back to the blow tank. Because of extreme freeness, it's important that the pipe-transported stock move continuously, thus preventing dewatering and line plugging.

Three in-parallel Brinkley rotary dewatering screens remove liquor and loose fibers from cook-softened chips which arrive from feeders at a controlled rate. NSSC stock leaves the screens at about 10-12% consistency. It flows directly into screw feeds of Sprout-Waldron disc refiners, each powered by a 450 hp 900 rpm Louis Allis motor. The extent of refining at this state is based on requirements of stock preparation department ahead of the machine.

Stock from the Sprout-Waldrons goes to two in-series Impco 11 ft. 6 in. by 16 ft. washers. Weak brown liquor is added to stock for its first washing and fresh water for second washing stage. Each has a Drew Engineering hood and ventilation system.

Washed, defibered NSSC stock from the second washer goes through a shredder into a screw feeder, first component of 3-section Link-Belt high-density screw conveyor transporting stock to a high-density Impco-equipped Stebbins tile lined storage tank.

HOW PROCESS VARIES FOR KRAFT—When making kraft pulp in the NSSC pulping addition the flow differs from that outlined above. Kraft stock leaves No. 3 blow tank via the same stock pump and line as does the NSSC stock, but instead of going to the Brinkley screens and Sprout-Waldron refiners, it is processed through two in-parallel Impco knotters before reaching two new Impco washers already mentioned in conjunction with the NSSC pulping process. Washed kraft stock also goes to the L-B screw conveyor. It can follow the NSSC route to high-density storage tank.

Otherwise, the first section of the high-density conveyor is reversed to divert the kraft stock which is then pumped directly to the regular unscreened brown stock storage ahead of kraft screen room—which also receives any kraft stock that goes to NSSC high-density storage tank.

A Cowan rotary screen was installed in kraft screen room to serve as the primary screen for this additional kraft tonnage realized from the new addition.

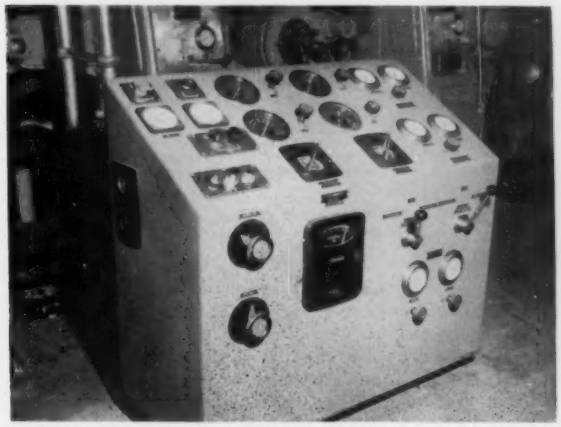
SOMETHING OLD; SOMETHING NEW—The NSSC liquor-making department—automatic except for unloading soda ash from rail cars—consists of some of the oldest and newest equipment at Longview. Storage and handling facilities for soda ash, carbonate, pink liquor and buffer were specially purchased and installed as part of the NSSC addition. But the acid plant of the original calcium base sulfite mill, which inaugurated production in Nov., 1931, is utilized for generating SO_2 and combining this gas with the carbonate solution to form pink liquor. Use of the acid plant had been discontinued when the sulfite mill changed to MgO base in 1948.

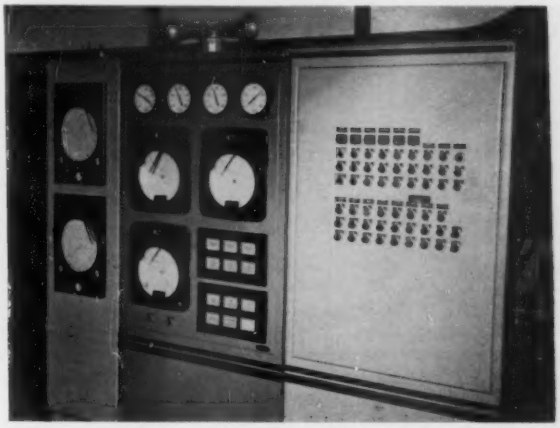
HOW PINK LIQUOR IS MADE—Pink liquor is made by mixing dry soda ash with water to form a 16% sodium carbonate solution; then adding SO_2 to form sodium sulfite.

Dry soda ash, arriving in bulk by rail, is transferred from rail cars to a dry storage tank via Fuller Airveyor. A horizontal reciprocating Link-Belt feeder and bucket elevator transport soda ash from this 20 ft. diameter by 24 ft. high storage to a mixing tank where a Lightnin mixer mixes it with water. A Republic Instrument differential transmitter continuously measures specific gravity in the mixing tank, and, in conjunction with a Foxboro controller in acid plant, controls specific gravity of the solution by starting and stopping the soda ash feeder.

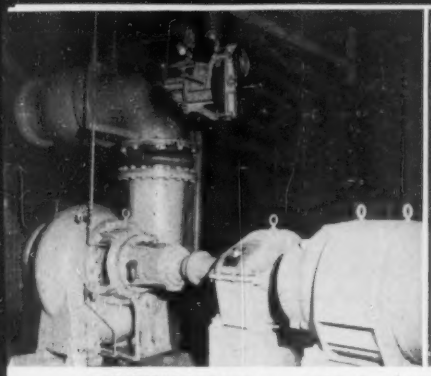
A recorder-controller also controls flow of water into the mixing tank. Thus, the operator need only make the proper specific gravity setting for the solution, and set the water flow at a rate permitting the soda ash conveyor to deliver almost continuously.

The 16% solution flows by gravity to a storage tank equipped with steam coil for keeping the soda ash in solution. From here it is pumped to one of two batch tanks. The solution is then circulated through a tile-packed tower (formerly the sulfite acid plant pressure tower) and back to the batch tank. As sodium carbonate enters top of the reaction tower, cooled SO_2 from the sulfur burners enters bottom of the tower and combines with the solution.

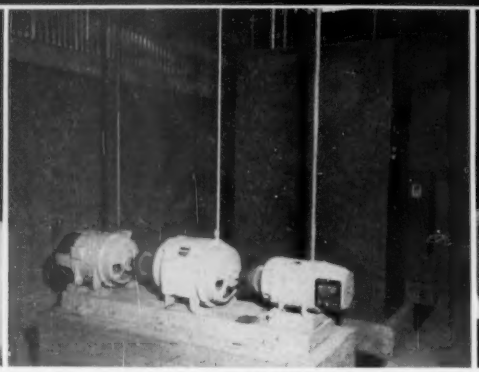




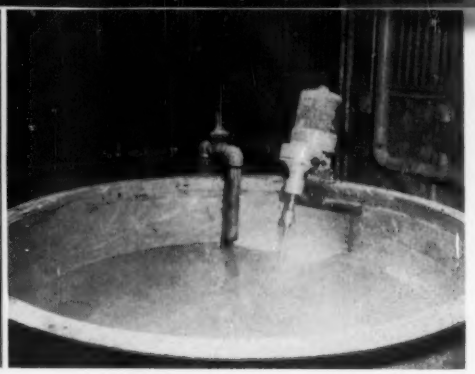
CONTROLS FOR NO. 4 MACHINE. At left, wet-end console. At right, backtender's dryer press control panel. Panalarm signals on condensate system; at left of picture, Minneapolis-Honeywell panel with broke pit level and consistency control.



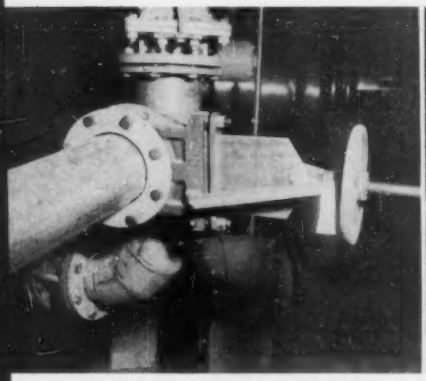
BINGHAM 10,000 gpm. 25-ft. head 1105 rpm. fan pump driven by 100 hp. 1760 rpm. 550-volt Louis Allis motor through Western Gear reducer. Beloit motorized valve (top) automatically controls volume of stock flowing to machine.



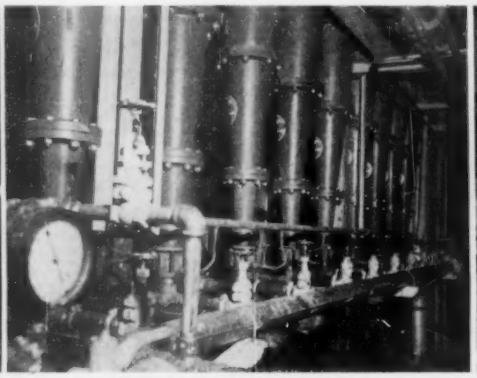
EXCITER-BOOSTER MG set and control cubicle for Reliance Electric wet-end helper drive of machine.



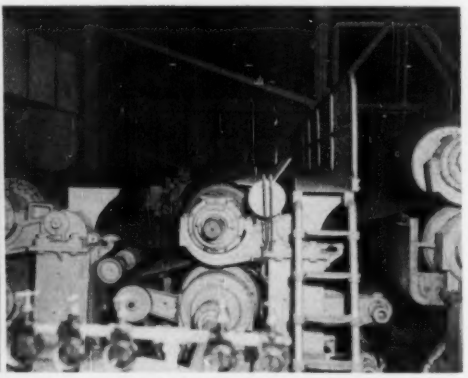
MIXING Morningstar Nicol "Stargum" starch in Northwest Copper stainless steel tank with Lightnin mixer.



KELTON wafer valve in Northwest Copper stainless stock line leading to Bauer cleaners.

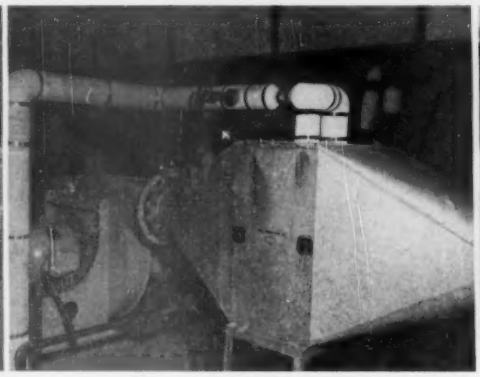


PRIMARY COMPONENT of two-section Bauer stock cleaner, processing stock.

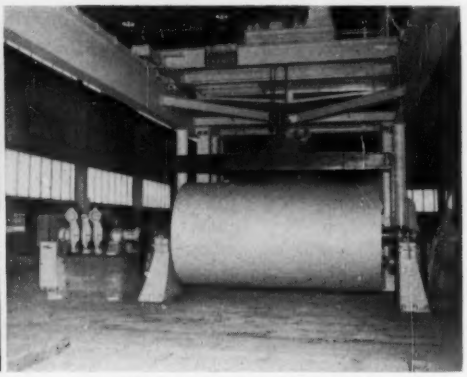


PRESS SECTION from back side. Top rolls all Griffith Rubber, 55 P&J self doctoring Topress (r to l) on first and second press, 35 P&J Topress on smooth press.

BACK SIDE of Beloit machine, showing Ross fresh air vents and hood, and Beloit PIV drive.



BLOWER-HEATER unit of Drew Engineering high-jet system of No. 4 machine.



PLACING 84-in. diameter by 148-in. long kraft roll in Beloit winder with Ederer crane in new machine room.

Views of New No. 4 Machine at Weyerhaeuser Longview with Interesting Auxiliary Equipment

Circulation continues until the composition reaches the desired concentration for use as pink liquor. A continuous Beckman pH indicator in acid plant control room constantly shows the extent of sulfiting in the reaction tower.

Four 3-way automatic Fisher valves in the liquor system, working in conjunction with associated Worthington pumps, control the flow to and from the batch tanks. These valves, connecting with a single selector switch in acid room, allow liquor to be pumped from a given batch tank into pink liquor storage tank while soda ash solution goes to the other batch tank and circulates through the reaction tower.

THREE TYPES OF COOKING LIQUORS—In designing the liquor-making system, facilities were incorporated for making, transporting and using buffer solution (Na_2CO_3) for adding to cooks as a means of keeping cooking liquor on the alkaline side. However, the use of clarified green liquor (from kraft liquor room) for this purpose has proven most satisfactory here in that it reduces the amount of fresh soda going to the recovery system.

Three types of liquor go into the cooks: Chemically active pink liquor, which softens the wood chips for defibering in Sprout-Waldrons; buffer (green liquor) to control pH of the blow; and brown liquor (spent, from washers) added to provide sufficient liquor volume to cover chips. Adequate volume is of concern not only in cooking, but also to make for clean blows.

NSSC pink liquor, per cook, contains about 5350 lbs. soda ash and 1300 lbs. sulfur; the buffer, nearly 600 lbs. Na_2O.

HOW LIQUOR IS EVAPORATED—To recover chemicals from NSSC brown liquor, separated from stock at the new Impco washer, it is mixed with kraft black liquor and subsequently processed as straight black liquor. The mixture goes through either of three Conkey sextuple effect evaporators, the third Conkey set

(built by Chicago Bridge & Iron) having been installed to accommodate increased volume resulting from the NSSC addition. Either mixed or straight kraft black liquors go to any of the three evaporators for concentrating from around 15% to 45% solids.

The concentrate is burned in either of two Babcock & Wilcox kraft recovery furnaces, the same facilities used prior to the NSSC addition.

RECOVERY PRESENTS PROBLEM—The resultant smelt is dissolved in kraft weak wash, and pumped to the causticizers. This recovery of NSSC chemicals for re-use as kraft chemicals has resulted in a 30% decrease of saltcake make-up for kraft. However, the figure is felt to be inconclusive because of intermittent use of the new addition for both kraft and NSSC.

Mixed liquor presents more of a combustion problem than does straight black kraft concentrate because of its higher inorganic content and consequently lower heat content, according to Tom W. Stewart, Pulp Division power supt. No additional recovery furnace capacity has been installed in spite of the additional load. However, a pressure-fired B&W power boiler of 250,000 pph rated capacity will be added in the near future to provide the Pulp Division with ample steam and power.

Operation of the new No. 4 machine necessitated adding 7,000 kw more electric power to the supply. Steam consumption jumped about 100,000 pph when this machine went into production.

BIGGEST GENERATING PLANT IN WEST—The electric power generation plant was expanded and another 12,500 kw General Electric turbogenerator installed, bringing rated capacity of Pulp Division generation to 35,000 kw, considered to be the largest electric generating plant in the industry west of Chicago.

The electric generating equipment consists of four G. E. units—the new automatic double extraction condensing turbogenerator; a 12,500 kw single extracting, condensing turbogenerator installed some three years ago for kraft expansion; and two 5,000 kw double extracting turbogenerators.

An Ingersoll-Rand single-pass, vertically divided water box thoroughfare condenser was installed in the latest power addition to operate with No. 4 generator. It receives water from main supply line in between the river pumps and filter plant.

NEW TYPE REFINERS – NSSC brown stock, pumped from high density storage, comes under jurisdiction of Supt. Ray Erickson when it arrives at a Brinkley-equipped 28-ft. diameter, 35 ft. high, low density storage tank adjacent to the refining room. The stock preparation section and machine room jointly occupy a new 480 ft. long building paralleling and joining No. 3 machine room and its stock preparation section.

Stock from the low density storage is thickened to 4% consistency on an 8 by 16 ft. Oliver Saveall then stored in a Stebbins tile lined refiner chest equipped with Brinkley agitator.

A 1500 gpm 150 ft. head Bingham stock pump supplies this stock to two 42-in. Jones Double-D Refiners which discharge under pressure of 30 psig. These new type refiners are piped to provide maximum range of refining. They can be operated in tandem, in series, or to recirculate stock to produce furnishes of various characteristics. Refined stock is stored and mixed in a jordan chest identical to the refiner chest. Each refiner is direct powered by a 600 hp, 400 rpm, 2300 volt Electric Products Co. motor.

FINAL TREATMENT IN JORDANS AND CLEANERS—Final stock refining is provided by four Emerson No. 4 jordans, equipped with Bolton heat-treated steel fillings, from which stock goes directly to a stainless stuff box fabricated by Northwest Copper. The jordans are individually driven by 400 hp, 400 rpm, 2300 volt Westinghouse motors joined to the Emerson units by Fast No. 6 telescopic couplings.

Refined stock for No. 4 machine passes through two fan pumps. The first, a 6500 gpm, 120 ft. head, 1185 rpm Ingersoll-Rand unit direct driven by 550 volt 250 hp Louis Allis induction motor, pumps regulated stock (from stuffbox) through Northwest Copper stainless piping to 2-stage Bauer Cleaners.

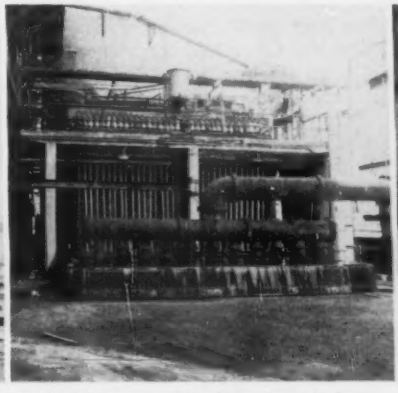
The main fan pump receives the cleaned stock and pumps it through a Beloit remote-control air-operated streamflow valve into a Beloit pressure-controlled flow headbox designed for either pressure or vacuum operation. A small Nash pump provides either pressure or vacuum at the headbox.

WHAT ARE FEATURES OF BOARD MACHINE—Of the four Weyerhaeuser machines at Longview, the latest two are for foodboard and paperboard. First two were for pulp only. The new No. 4, for both NSSC and kraft was built by Beloit Iron Works. It is rated at 1500 fpm.

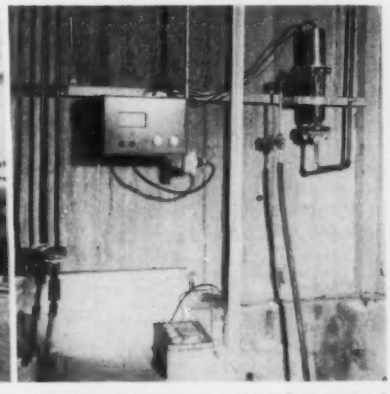
The Fourdrinier, using wire 165 in. wide by 130 ft. long, has main beams, saveall pans and component parts built of stainless steel or other noncorrosive metals. Forming area of the Fourdrinier is provided with Micarta-covered aluminum-body table rolls. Formation is assisted by a multiple high-speed shake unit in conjunction with the breast roll mounting and first two table rail sections.

Prime components of this Four-

TRANSFERRING soda ash (Westvaco Chemical) via Fuller Airveyor to dry storage tank (left) (American Pipe & Construction Co.).

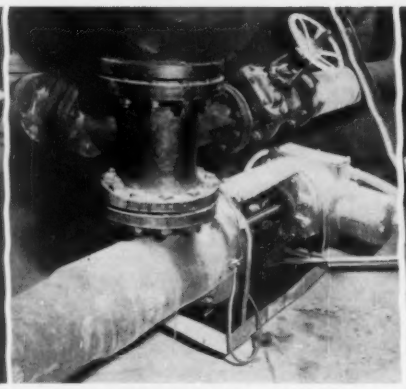


JENSEN SO_2 combined pond-vertical gas cooler, originally part of calcium-base liquor system, now used by Weyerhaeuser for making NSSC and MgO base sulfite liquor.



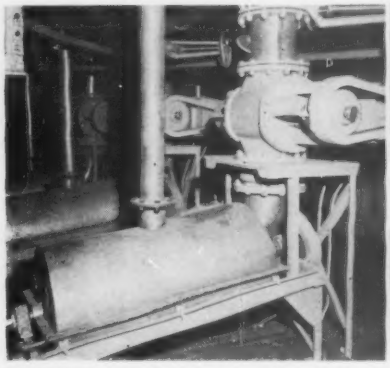
BECKMAN continues pH indicator (top) operating in conjunction with reaction tower of Weyerhaeuser NSSC liquor dept. Portable pH Beckman meter on table in foreground.

BOTTOM END of new NSSC digesters, built by Chicago Bridge of Lukens cladding, with Esco circulating system using Alaska Copper stainless piping and Bingham Circulating pump. Pipe and digester insulation by Fiberglas Engineering.

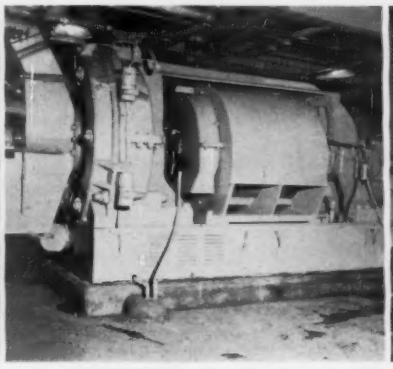


YARNALL-WARING blow valve of No. 10 Weyerhaeuser digester.

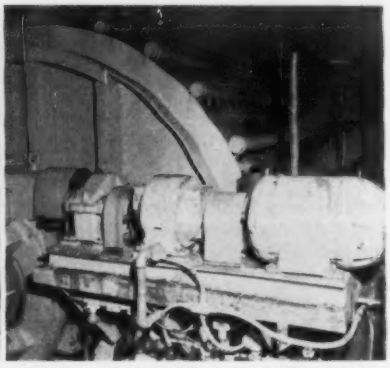
AUTOMATIC double-extracting 12,500 kw 13,800-volt General Electric Turbogenerator brings rated capacity of Longview pulp division generating facilities to 35,000 kw, largest of industry west of Chicago.



NEW TYPE stainless rotary dewatering screens with stainless rotary vane feeders, developed and supplied by James Brinkley Co., for processing NSSC cooked chips from No. 3 blow tank. Louis Allis motors drive feeders through Falk Motoreducers.



ONE OF THREE Sprout-Waldron screw-feed refiners operating in parallel between dewatering screens and washers of Weyerhaeuser NSSC pulping addition. Each refiner powered by 450 hp 900 rpm Louis Allis motor.



DRIVE of first stage Impco NSSC washer in Weyerhaeuser addition consists of 25 hp Louis Allis squirrel cage motor in conjunction with water-cooled Dynamatic variable-speed eddy current clutch and Western Gear reducer.

drinier include a 28 in. diameter centrifugally cast brass breast roll followed by Micarta-lipped stainless steel forming board, eight stainless suction boxes 12 in. wide extending full width of the wire, and a cantilevered 42 in. diameter Beloit double-box suction couch roll. A 20 in. diameter lump-breaker roll, covered with 2 in. thickness of Neoprene by Huntington Rubber, operates in conjunction with the couch roll. An air diaphragm mounting, controlled from front side of the machine, raises and lowers the lump-breaker roll.

A trussed building-support section, between Nos. 3 and 4 machines, facilitates changing wires on this new Beloit removable Fourdrinier.

HOW PRESS SECTIONS ARE EQUIPPED—The first and second presses have Beloit 30 in. diameter suction press rolls, rubber covered by Manhattan, and Griffith self-doctoring Topress rolls. The second press is equipped with air-bleed, wide-angle suction box for straight-through running of the sheet.

Vickery felt conditioners, each with three jordan type heads, operate in conjunction with first and second press felts which are also equipped with air-motor operated vertical felt stretchers and Beloit air-operated guides. The wet felt rolls, rubber covered by Griffith Rubber, have 177 in. face.

The third press section—a smoothing press equipped with self-doctoring Griffith Rubber Topress roll and Huntington Rubber-covered bottom roll—can readily be converted to a plain third press at some future time.

DRYERS ARE IN THREE SECTIONS—The Beloit dryer section consists of three component units—two ahead of the size press and one behind it. There are 61 sheet dryers and 10 felt dryers—all 60 in. diameter. All are equipped with enclosed back-dryer gears and arranged for continuous oil lubrication.

Of the two main dryer sections, the first consists of 20 sheet dryers and six felt dryers, the second with 20 dryers and two. Each sheet dryer is of Beloit's latest design with installed back journals suitable for operation at 125 lbs. steam pressure. Beloit duplex steamfits mount rigidly from the back dryer case. Bearings are heavy duty SKF spherical roller type with self-aligning front bearing mounting. Each dryer has a high-speed condensate remover.

The size press (Beloit) has heavy duty press frames carrying two 28 in. diameter rubber-covered rolls—the top one covered by Griffith, the bottom by Huntington—equipped with SKF spherical bearings. Two rubber covered rolls are used for conveying the sheet to and from the size press, and a Mount Hope expander roll spreads the sheet before arriving at the final drying section consisting of eleven 60 in. sheet dryers (6 top and 5 bottom) and two felt dryers.

HOW DRY END IS EQUIPPED—

Photo at upper left shows covered hopper cars of Westvaco Soda Ash being unloaded at Weyerhaeuser's Longview Washington plant. We operate a large, brand-new fleet of covered hopper cars to provide unusually good service within our shipping area.

Westvaco® SODA ASH

physically and chemically ideal for paper-mill use

Free-flowing, non-dusting, quick-dissolving *Westvaco Soda Ash* produces clear solutions with a minimum of insoluble residues. It sets a new industry-standard for chemical purity and physical properties. It's an excellent all-around money value for mills within our shipping territory.

Our Westvaco, Wyoming Plant on the mainline of the Union Pacific is ideally located to serve mills from the Soo to the Panhandle to the Pacific. Have you received samples and quotations? We'd like to have you have them!

fmc FOOD MACHINERY AND CHEMICAL CORPORATION — Westvaco® CHEMICALS

Westvaco Chlor-Alkali Division

FOOD MACHINERY AND CHEMICAL CORPORATION

General Offices • 161 East 42nd Street, New York 17

CHARLOTTE, N. C. • CHICAGO, ILL. • DENVER, COLO. • PHILADELPHIA, PA. • ST. LOUIS, MO.

The calendering section consists of a Beloit open-side calender stack designed for using 8 chilled iron rolls; 28 in. diameter bottom roll and 15 in. intermediate rolls.

The reel is a heavy-duty Beloit kraft unit with 36 in. diameter reel drum carried in anti-friction bearings. It takes a sheet up to 153 in. wide, has capacity for 84 in. diameter rolls, and uses air tensioning cylinders (with both primary and secondary ways) to make uniform rolls. A steel roll facilitates carrying sheet into reel from the calender stack.

An Ederer bridge crane transports the reel rolls to a new Beloit double-drum winder for processing into rolls up to 72 in. diameter. The winder has motor-driven shear slitters, air-loaded sectional motor-driven rider roll, roll ejector, shaft puller, and roll lowering unit for delivering rolls to operating floor level. The winding stand is equipped with automatic tensioning facilities controlled according to the tension of sheet going to slitters. A 150 hp direct current variable-speed Reliance Electric & Engineering motor provides main drive for the winder.

Final roll processing consists of wrapping, weighing on Toledo "printweight" scales, and lowering via Link-Belt table for delivery to groundfloor warehousing-shipping section.

HOW THE MACHINE IS POWERED—The Beloit differential drive on No. 4 machine is of the same type as that on the No. 3 Beloit machine. The several machine sections have their respective differential drive components, each of Beloit's newest design multiple-disc type with air-operated clutch. Control cabinets provide for adjusting draws between sections. This drive gives complete mechanical tie between sections. Controls are mounted at front side of the machine for operating convenience.

A 1000 hp Worthington steam turbine, with Woodward (Governor Co.) BG-1 oil governor, provides prime power for No. 4 machine operation. It is centrally located at backside of the machine on main floor level.

Reliance Electric & Engineering motors are used to provide auxiliary power in specialty applications including a booster on wet-end drive, and drives for Fourdrinier shake, rectifier roll, lumpbreaekr roll and first wire return roll.

AUXILIARIES SERVING MACHINE—Broke, from winder and the machine, goes to a Rice Barton "Quatro Pulper" for repulping.

Other auxiliaries of the new machine include machine hood and vent system by Ross Engineering; space heating, winder trim blower and hi-jet system by Drew Engineering; Ross Midwest-Fulton system for handling condensate; a Minneapolis-Honeywell speed recorder and rest of the instrumentation principally by Foxboro; Nash Hytor vacuum pumps; Stebbins tilework; Brinkley agitators in couch pit, tailings and stuff chests; and 20-ton Whiting bridge crane serving the machineroom.

Another Expansion
Completed at Longview

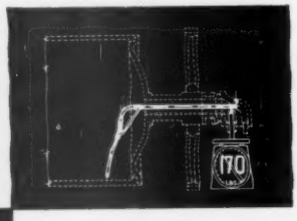
A new 35-ton addition to the sulfite mill has been completed and cut into production by Pulp Division, Weyerhaeuser Timber Co., Longview, Wash. It will provide slush Mitscherlich type pulp for the new R-W Paper Co. glassine mill now under construction, jointly owned by Rhinelander and Weyerhaeuser.

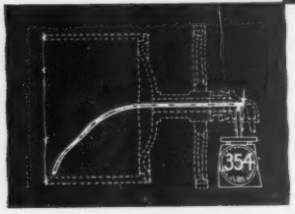
Until the glassine plant gets into production the new pulp will be dried for market.

This installation included two Chicago Bridge & Iron digesters; screen room with Impco knotters, Cowan screens and Bauer cleaners; an Impco bleach plant with continuous chlorination, neutralization and continuous hypochlorite bleaching; and hi-density storage for bleached pulp.

For the R-W mill, this pulp will be pumped a half-mile through 14-in. pipe.

AUTO-FLEX SYPHON





makes sense

That's right. It's a sensible syphon and its performance proves it. Ross Midwest Auto-Flex employs a brace and a spring for two important reasons:

1. To positively hold syphon in place—proper clearance of pipe end and dryer wall.
2. To reduce leverage and resultant wear on the "joint." Leverage only 170# vs. the 300-400# usually exerted by straight pipe syphons.

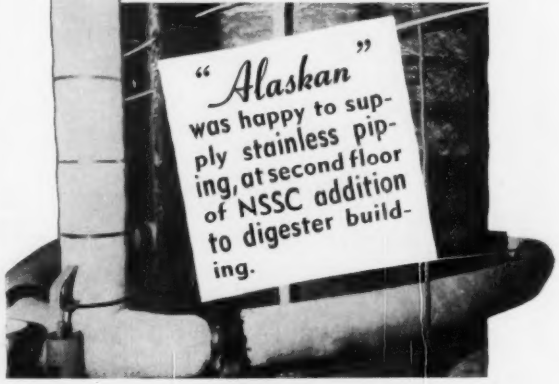
Thousands in use in scores of mills testify to their efficiency.

ROSS MIDWEST FULTON CORP.
DAYTON, OHIO
A subsidiary of J. O. Ross Engineering Corporation

Since 1913

Congratulations

to Weyerhaeuser Timber Co. on completion of their new neutral sulfite semi-chemical pulp mill



ALASKAN COPPER
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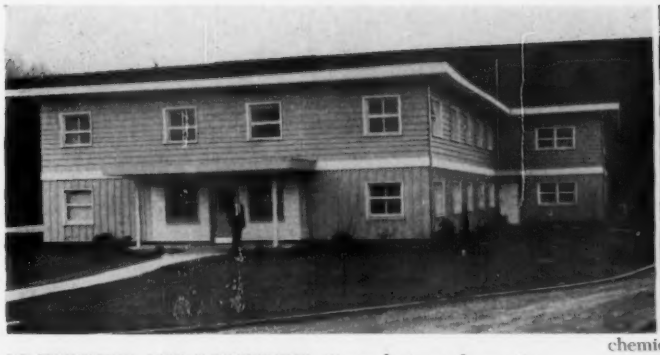
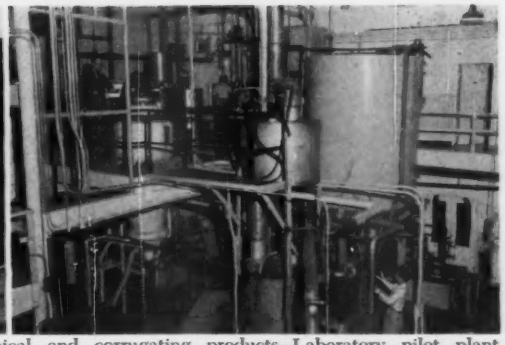




AT EVERETT AND LONGVIEW. General view of new Research Laboratory at Everett, with 10,000 sq. ft. of floor space. View at right shows where research was done for new semi-chemical and corrugating products—Laboratory pilot plant, area 15,000 sq. ft., at Longview. Units include 40 cu. ft. digester, flash, blow and stock tanks, flat screens, and Morden Slush-Maker in foreground.

How Research Expands,

Too, for Weyerhaeuser

● In addition to the Weyerhaeuser Timber Co.'s Pulp Division research facilities at Longview, where research was done preparatory to the new semi-chemical pulping and corrugating medium, a new laboratory has been established at Everett, Wash., alongside the sulfite mill.

Research at Everett is devoted primarily to cellulose and highly purified paper and conversion pulps. A complete pilot plant for the production of pulp from various species is now in operation.

LEADERS IN RESEARCH. HAROLD W. BIALKOWSKY (left), Dir. of Research, based at Longview, who directed preliminary work for new semi-chemical pulping and corrugating medium additions, at Longview headquarters. JACK REAGH (right), Asst. Dir. of Research, in charge at new Everett Laboratory, where work is done with dissolving and purified grades.

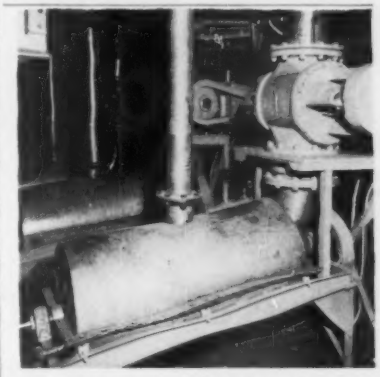
Everett and Longview laboratories cooperate back and forth on research projects and many operating problems.

At Everett, Dr. J. D. (Jack) Reagh (pronounced Ray), associate director of research, is in charge. Dr. Harold W. Bialkowsky, director of research for the pulp division, heads up both Everett and Longview laboratories.

Dr. Reagh is a native of Seattle and served in the British Royal Engineers previous to U. S. entry into World War II, later transferring over to U. S. chemical warfare service overseas. He received his ph.d. at Cambridge, England, earlier degrees at Stanford University.

Working with Dr. Reagh are J. H. Brown, chem. engr., head of dissolving pulp group; J. J. McNair, chemist, head of analytical group; R. R. Casper, research physicist; Lee Larsen, in charge of cooking and bleaching dept.; Robert Rieke, chemist, dissolving pulp; and Patrick O'Neill, chem. engr.

Dr. Bialkowsky took his undergraduate work at MIT and was one of first two men to receive a doctorate at the then new Institute of Paper Chemistry in 1933. With Gilbert Paper Co., for eight years, he joined Weyerhaeuser as technical director at the Everett mill, later was associate research director and became research director in 1948.



SCREENS AND PROPORTIONING EQUIPMENT FOR WEYERHAEUSER NEUTRAL SULPHITE at LONGVIEW

Manufacturers of Pulp Mill Equipment

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RECENT INSTALLATIONS

WEYERHAEUSER TIMBER CO.
Springfield, Ore., Longview, Everett and Cosmopolis, Wash.

PUBLISHER'S PAPER CO.
Oregon City, Ore.

CROWN-ZELLERBACH CORPORATION
West Linn, St. Helens, Ore., and Camas, Wash.

WESTERN KRAFT CORPORATION
Albany, Ore.

A PRESIDENT'S EYE ALMOST POPPING—Plenty of reason to. President SAMUEL KIPNIS of National Container Corp., who came down from New York for the event, takes the first sample off the first reel of the first paper roll made at Valdosta.

VICE PRESIDENT'S EYES SHINE TOO— William T. (Bill) WEBSTER'S "baby" was this Valdosta mill. No wonder he looks so eagerly for the result as he starts off the first cook—"steaming" the first digester—in this rare picture.

CUTTING THE FIRST SAMPLE—This is KARL M. GUEST, Manager since the startup of National's new pulp and paper mill. He will long remember this moment, when he cut the first sample off the machine for laboratory tests.

A Rare Moment Captured in Pictures

TOO EXCITED TO KNOW HE'S UP TO HIS HIPS IN PULP— A tense moment (left to right): CARL NOBLES, Instrument Supervisor; W. C. (JAKE) HAYES, Paper Mill Supt., and oblivious of the fact his pants are drenched in wet pulp, AL DENNARD, Asst. Paper Mill Supt., working to get the new machine started.

• The air is charged with electricity.

The safest worker in the world is liable to get hurt . . . let all such hurts be little ones. . . .

Nerves are frayed . . . but sustained by a thread of ecstatic happiness . . . supervisors are sharp, but fair . . . there is no place for an angry man on this occasion. . . .

We are talking about the startup of a new mill . . . "putting paper over" on a brand new machine for the first time. . . .

FIRST TIME PUBLISHED—On these pages are some "first-run" pictures of the startup of a fine new mill in the South. Never published before, these pictures show what happened at the startup last year of the newest division of National Container Corp. at Valdosta, Ga.

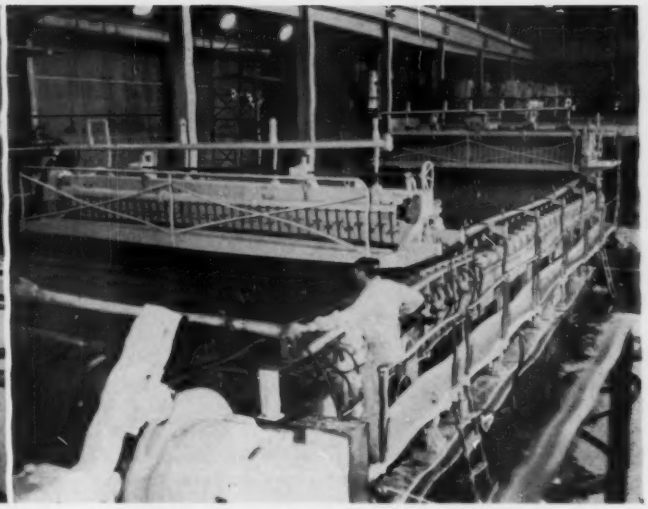
The expressions on the faces of these executives . . . the pants of a superintendent, soaked on pulp slurry above his knees . . . the throwing of the first switches. . . .

These pictures have captured a moment and a day in memory, that will always be perhaps the most thrilling of all in the careers of these men.

For the story describing in detail this Valdosta mill, with a two-page flow chart and numerous pictures of equipment and processes, see PULP & PAPER's April 1954 issue.

RECORD PRODUCTION — 666

AND THAT SHE BLOWS!—No doubt MELVIN FARRIS, Pulp Mill Supt. at Valdosta, will try to recapture this thrill in memory many times . . . But here it is in a picture. He is in the act of blowing the mill's first digester.



IN ACTION FOR THE FIRST TIME—They did get it started: Valdosta's 240 in. Bagley & Sewall fourdrinier with two Valley Iron Works headboxes. On mezzanine are Sutherland refiners . . . one has been added, so there are now ten Sutherlands there.

TONS—In March, 1955, this mill hit a record production figure of 666 tons in just one day of paperboard on its 240-in. wide Bagley & Sewall Fourdrinier machine. It has often run over 500 tons on board, making 597 tons on Oct. 10, last time it was visited by a PULP & PAPER editor. It runs 300 tons a day or more on multiwall bag. The machine has one of the finest Ross Engineering air systems in the South.

Five unusually large direct cook Chicago Bridge digesters, Combustion Engineering power and recovery boilers, Goslin-Birmingham evaporators, a new type Dorr causticizing system, Allis-Chalmers dual lime kiln, Cochrane water treatment, 100% brown stock washing and refining, with two lines each of Emerson Claflins and Impco washers, and a battery of Sutherland refiners (there are 10 now) ahead of the machine—these installations, including many "firsts"—are described fully in that article.

Wolcott Hooker Honored; New Impco Appointment

R. WOLCOTT HOOKER (left), Vice Pres. of Hooker Electrochemical Co., Niagara Falls, N.Y., is newly elected President of Synthetic Organic Chemical Mfrs. Assn. "Woos" Hooker was born in Chicago, Ill., and is a graduate of The Hill School and Cornell University. He started as a salesman for Hooker in 1922, became Sales Mgr. in 1935, Vice Pres. in 1941 and is responsible for purchasing policies and public relations.

THOMAS S. BOERKE (right), is new member of Sales Engineering Dept. Pulp & Paper Div., of Improved Machinery Inc. He will cover New England. Tom's a grad of the Engineering College of the U. of Maine and has 10 years experience in this industry; five in pulp and paper mill engineering and five in industrial sales.

They Are Off! For Bolton Award Contest

John W. Bolton & Sons, Inc., and the Supts. Assn. announce this subject —"Here's What I Want From My Work" for the 1956 Bolton essay contest, open to all employes of North American pulp and paper mills. Cash prizes: $1,000, first prize; $750, second prize; $500, third prize; and, seven prizes of $200 each.

Papers should be about 1,500 words, typed, double-spaced, on one side of 8½ x 11 in. sheets, Author's name and position, name and location of mill to appear only on a cover sheet.

Deadline (postmarked), March 31. Mail to Secy.-Treas., American Pulp & Paper Mill Supts. Assn., 327 So. La Salle St., Chicago 4, Ill.

End of Foley, Fla.

Foley, Fla., once the scene of a booming town when Brooks-Scanlon, Inc., erected its great sawmill there 26 years ago, is fated to become a has-been. Entire town will be eliminated by Buckeye Cellulose Corp., which purchased the big mill cutout, land and properties and is selling the town's houses to employes on the agreement that the homes be moved elsewhere. Most of them will be taken to Perry, the county seat a few miles away.

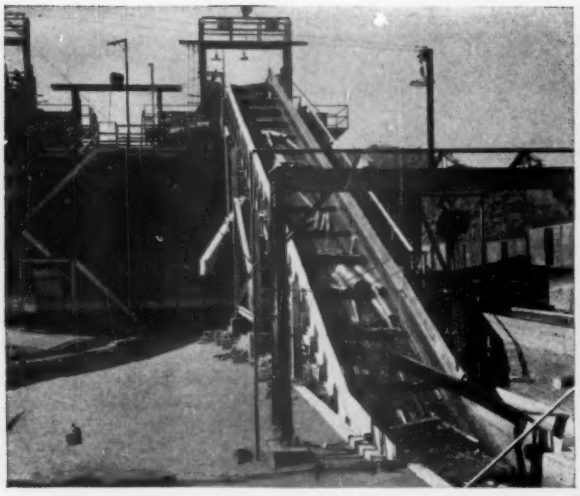
Kraft Mills—A Possible Market for Waste Liquor

An article in Mining Engineering says Manganese Inc., Henderson, Nev., is successfully using waste products from sulfate pulp in upgrading manganese ore. This might point the way to more of mining industry using kraft black liquor skimmings or waste.

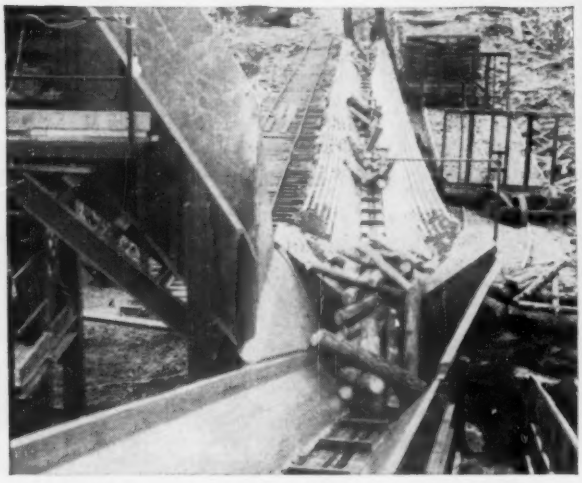
Desmarais and Peterson in New Posts

HUBERT A. (GOB) DESMARAIS (left), has joined Verona Dyestuff Division of Verona Chemical Co., Springfield Road, Union, N.J., as head of sales development. A graduate of Dartmouth College, and a papermaker in eastern mills as a young man, he has had many years experience in the dyestuff field, serving this industry on both West and East Coasts.

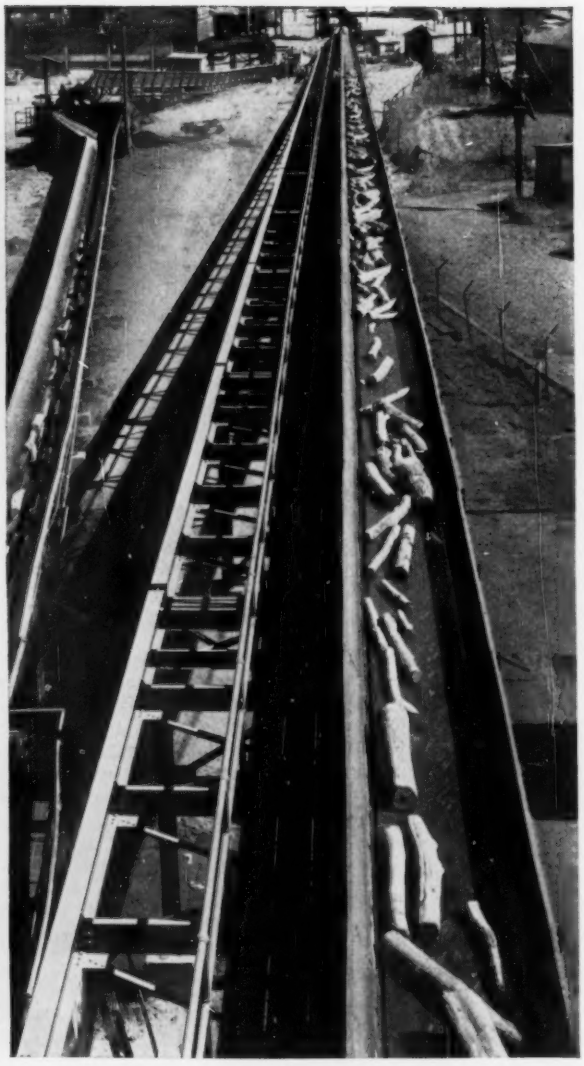
H. B. (PETE) PETERSON (right), West Coast Technical Sales Rep. of Hercules Powder Co. for 10 years, is transfering from the Portland, Ore., plant to the Milwaukee, Wis., plant, where he will be Technical Sales Rep. and will have additional duties. He has been with Hercules 16 years.



Two strands of rugged Rex A-111 Durobar Combination Chain with steel angle flights provide the power to elevate pulpwood from flume to barking drums.



Rex Mill Refuse and Log Chain No. 8118 with flight attachments is ideal for moving pulp logs from wood yard to mill. It's ruggedly built to stand up under severe pounding.



Many pulp mills rely on Rex Belt Conveyor Idlers for economical transportation of pulp logs. Here, Rex Flat Belt Idlers carry barked pulp logs from barking drums to the chippers.

For any wood yard conveying problem... Chain Belt has the right answer

CHAIN Belt has designed a complete line of Rex® Power Transmission, Conveying and Elevating Equipment to give pulp mills better wood handling service...at lowest possible cost. Whether your requirements call for hauling by flume, by chain or by belt, dependable Rex Equipment will handle the job, efficiently.

When you consult with a highly trained CHAIN Belt Man you can expect him to furnish not only the *finest* equipment of its kind...but also the *right* equipment for the application.

FOREST PRODUCTS BULLETIN 53-54... An informative, illustrated booklet on how Rex Equipment serves the industry will give you a complete picture of our equipment and ability to help you. We will send your copy promptly upon request. Write CHAIN Belt Company, 4691 W. Greenfield Ave., Milwaukee 1, Wisconsin.

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CONVEYING • ELEVATING • POWER TRANSMISSION FOR SAWMILLS • PLANING MILLS CHIPPING MILLS • PULP MILLS • SOFTBOARD • HARDBOARD AND PLYWOOD PLANTS

For More Speed from Forest to Mill

. . . assign your decking and loading operations to a Bucyrus-Erie Transit Crane and watch it reduce the cost of moving logs by bringing added flexibility and more speed to your operations all along the line.

With its rubber-tired carrier mounting, a Bucyrus-Erie Transit Crane can bring new efficiency to your loading operations. It can change landings in a matter of minutes . . . climb steep mountain grades under most adverse loading conditions. One logging firm reports: "Our machine (a 22-B Transit Crane) has been able to travel 20 per cent grades, often with snow and mud conditions quite severe."

Operating efficiency is equally high. The Transit Crane features a fully independent power boom hoist which lets the operator boom up or down at any point in the loading cycle. The load is always under precise control, too, because the main hoist line has power controlled lowering.

See your local Bucyrus-Erie distributor soon for complete information on these machines. Two models are available — the 15-ton 15-B, and the 25-ton 22-B. 165E55

BUCYRUS ERIE

South Milwaukee
Wisconsin

This 15-B Transit Crane, equipped with log grapple, is loading pulpwood from trucks to gondola cars in northern Minnesota.

the all new "QUICK-WAY"

GREATER POWER AND CONTROL FROM BUILT-IN BALANCE

CONSTANT QUIET POWER

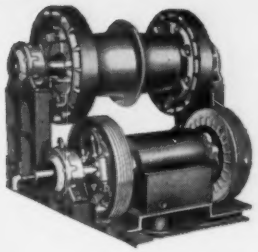
Rugged as the Rockies

"QUICK-WAY"- 50	"QUICK-WAY"- 80	"QUICK-WAY"- 100	"QUICK-WAY"- 125
¼ Yd. 5 Ton	⅜ Yd. 8 Ton	½ Yd. 10 Ton	½ Yd. 12½ Ton

and . . . Five new *"QUICK-WAY"* Carriers

THE MOST COMPLETE LINE IN THE SMALL SHOVEL FIELD

with MORE Big Shovel FEATURES



MAIN ASSEMBLIES

Power up and down boom standard on all models.

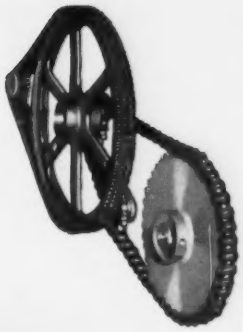
High tensile steel shafting. Any one main assembly removable without tearing down others. Positive control shaft centers for 100% clutch and brake action.

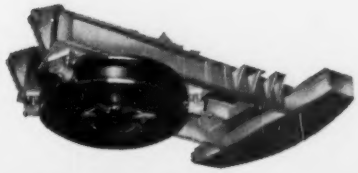
AIR COOLED DRUMS

Large size, louver-ventilated, ductile iron clutch and brake drums, finned-ventilated swing assembly drums . . . specially designed for cool, continuous running at top efficiency.

ALL CHAIN & SPROCKET DRIVE

Machine-cut steel and cast iron sprockets with compact, high-speed, heavy-duty roller chains give positive power, reduced noise, and greater flexibility under every operating condition. Oil and dust tight cases.



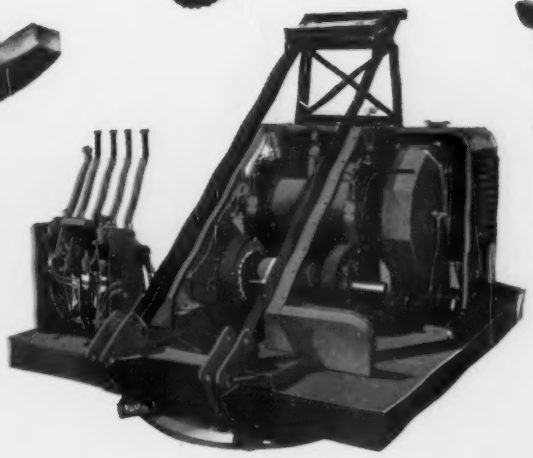


CLUTCH CONTROLS & HYDRAULIC SYSTEM

Smooth, positive minimum-effort control from new hydraulic system. New design control lever locks.

BULL GEAR, HOOK ROLLERS & MACHINE FRAME

Heavy, fully machined, hard steel rollers and roller path. Large, sturdy cast steel and electrically welded machinery frame. Perfectly balanced design assures minimum stress and absolute alignment to shafts, bearings and swing table gear.

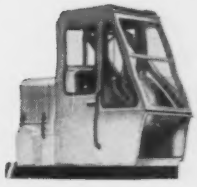


ANTI-FRICTION BEARINGS

Self-aligning, anti-friction bearings on all high-speed, continuous, rotating shafts and drums. Special long-life, alloy bronze bearings on swing rollers and center rotating sleeve.

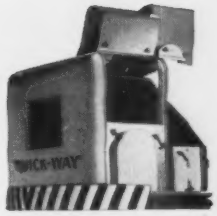
ADVANCE DESIGN LUBRICATION

Daily grease fittings centrally located on cab panel. Intermittent grease fittings easily accessible. Positive grease and dirt seals at all revolving points. Force-feed, filtered, circulating lubrication on all chain and sprocket drives and on main shaft bearings. Main bearings also running in oil.



COMFORTABLE FULL VISION CAB

All operating controls, including instrument panel and lock throttle, conveniently located in front of operator. Safety glass windows on all sides and top insure full vision—sliding and hinged windows provide maximum ventilation.



HINGED PANELS FOR EASY MAINTENANCE

Hinged, fold-out panels all around for quick, easy maintenance and adjustments.

PRECISION BUILT, RUGGED, FULLY CONVERTIBLE

. . . the new "QUICK-WAY" models, designed to heavy-duty specifications . . . with more big shovel features than any other in the small shovel field . . . have perfect BUILT-IN balance that guarantees precision control, greater lifting power, longer life and more work per horsepower. Write today for complete information, or see your "Quick-Way" distributor for a FREE demonstration.

Special Spot Master

for Log Grapple for pulp wood operation. Eliminates several men. The operator turns the grapple so he can pick up or dump load in any position.

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Denver, Colorado A Penn-Texas Subsidiary

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CHECK LIST FOR PULPWOOD HANDLING

If handling pulpwood is one of your operations, you will want to check the chart at the right. Look under the location of the job—the kind of wood—the device needed—and the mounting required. You'll be referred to a picture below that shows how Lorains have already solved the problem. Your problem, too, can be solved with a Lorain. Ask your nearby Thew-Lorain Distributor to help you.

THE THEW SHOVEL CO., LORAIN, OHIO

SEE PHOTO	LOCATION			KIND OF WOOD			DEVICES				MOUNTINGS		
	WOODS	YARDS	MILLS	STACKED WOOD	WET WOOD	JACK STRAWED	SLINGS	GRABS	GRAPPLES	RAKES	CRAWLER	RUBBER TIRE	SPECIAL
1		✓			✓	✓		✓			✓		
2		✓		✓			✓					✓	
3			✓			✓		✓			✓		
4			✓	✓						✓			✓
5	✓			✓			✓				✓		
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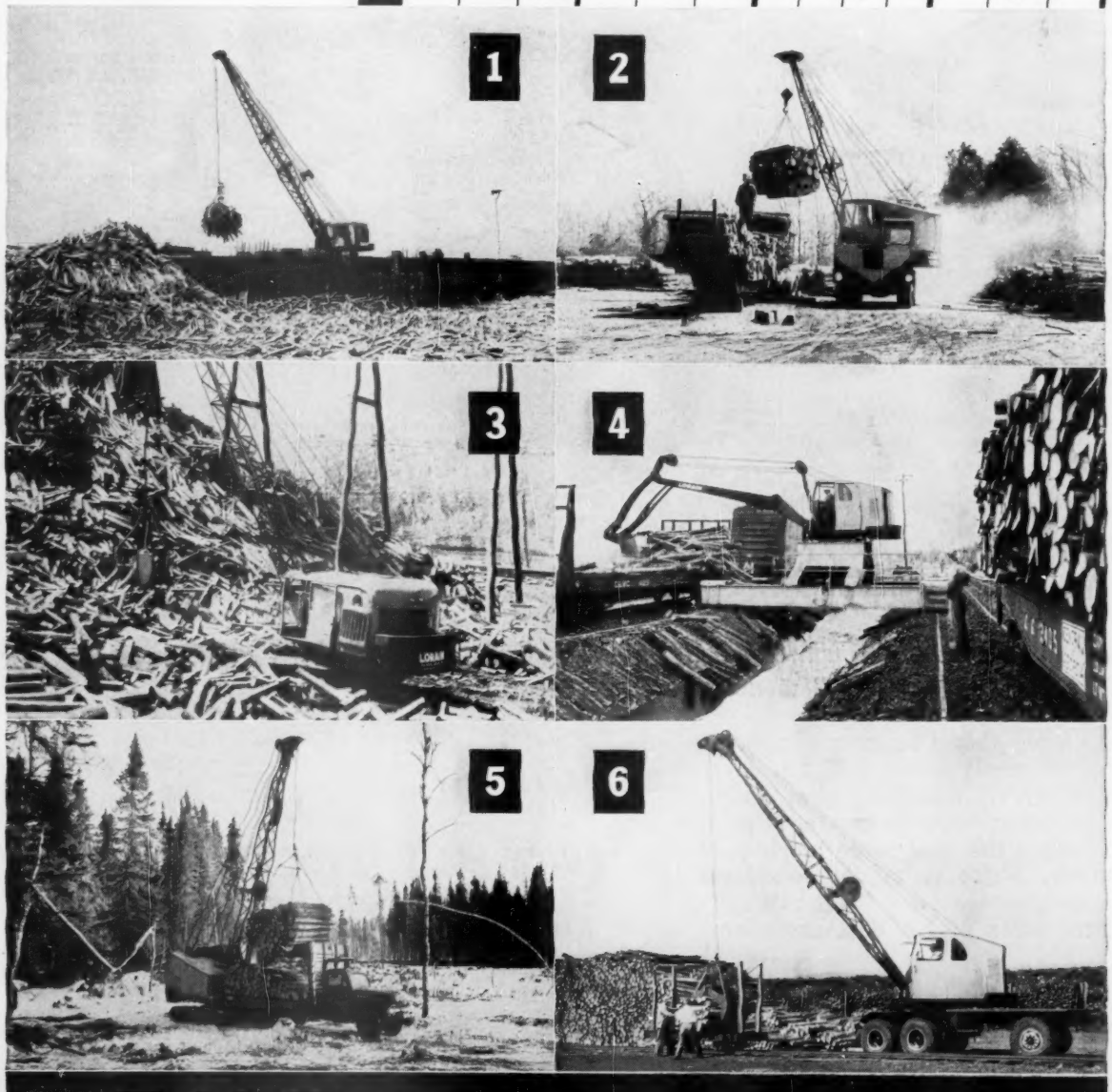


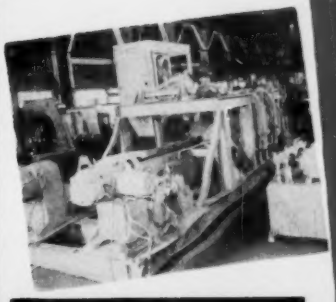
THEW-LORAIN®

PULP MILLS . . . Attention

Sumner

HEADQUARTERS FOR WOODROOM MACHINERY

From LOG HAUL to CHIP SCREENS



LOG HAUL,
DECK AND GENERAL
TRANSMISSION MACHINERY

•

BARKERS
HYDRAULIC - MECHANICAL

•

LOG BREAKDOWN MACHINERY
AXE SPLITTERS
BAND MILLS
TWIN BAND RIPS
NO MAN CARRIAGES
SLASHERS

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CHIPPERS

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CHIP SCREENS AND
FEEDERS

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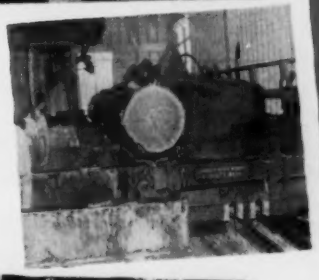
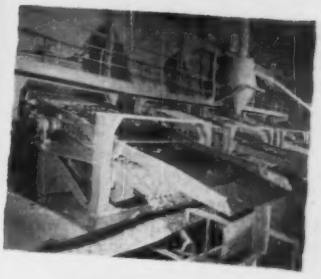
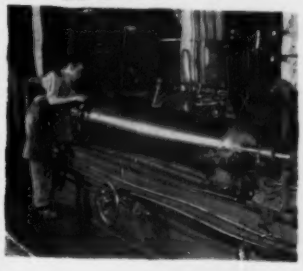
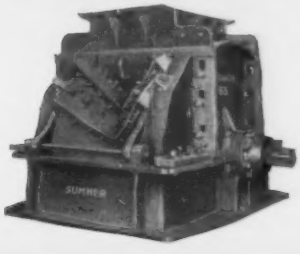
SPECIAL PULP
AND PAPER MILL
MACHINERY
SULPHUR BURNERS
DECKERS
WASHERS
WET MACHINES
MOLD ROLLS
AGITATORS
PAPER SHREDDERS
GENERAL
TRANSMISSION
MACHINES









Designers and Builders of Quality Machinery for the Forest Products Industries

ESTABLISHED 1892

SUMNER IRON WORKS

EVERETT, WASHINGTON

In Canada: Canadian Sumner Iron Works, Ltd., Vancouver, Canada

A NEW WOOD SPECIES FOR PULP—A NEW DESIGN FOR HANDLING. Link-Belt conveyor-transfer system of Weyerhaeuser's Longview hardwood barking-chipping plant receiving alder logs arriving by rail and truck and delivering them to barker, just out of picture at lower left. A Pettibone-Mulliken rubber-tired Cary-Lift is unloading truck in upper area.

New Kind of Wood Plant in Far West

At Longview, Weyerhaeuser "reforms" the lowly alder, long the "problem child" of Pacific slope forests

● How the hardwoods of Southwestern Washington are handled and prepared for Weyerhaeuser Timber Co.'s new semi-chemical pulp and 9-pt. corrugating medium, made at Longview, Wash., is a story in itself.

This was a completely new innovation on the West Coast—one other mill in the Far West now is also a major user of the former "weed" species, alder. But wood handling and wood preparation of these hardwoods at Longview brought forth some original engineering there, and the development of quite a few new ideas and devices.

Alder in the Far West belongs to the birch family, and resembles somewhat the aspen used in relatively new pulping processes in the Midwest. The increasing interest in hardwoods of this general type in Eastern United States would imply that some of the lessons that Weyerhaeuser learned, some of the methods it developed, could be of interest elsewhere.

Elsewhere in this issue (see article "How Semi-Chem Ties in with Kraft") is the general story of the new plant and installations at Longview.

THE STORY OF WOOD PREPARATION—For followers of our PULP-

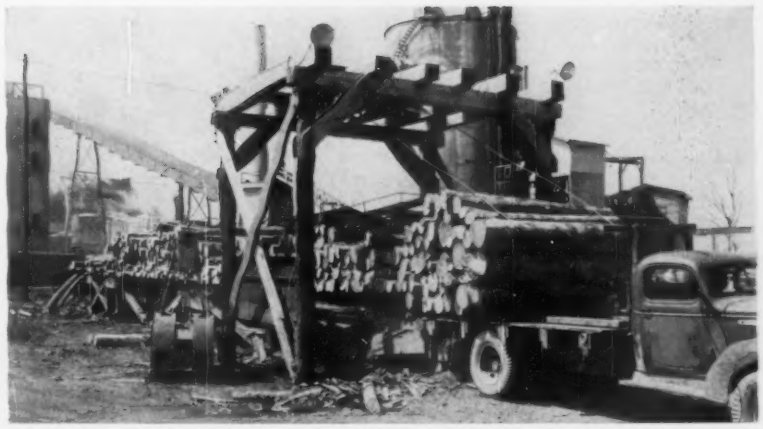
WOOD SECTION, here is the detailed story of wood handling and preparation up to that point. In the pulp, hardwood chips are mixed with softwood chips, as the preceding story told.

Hardwood, particularly alder, is plentiful around Longview, and this new addition and process has made it possible for Weyerhaeuser at Longview to increase its already highly diversified utilization of wood of all qualities and species. Yield is increased from 45-55% up to 65-70% and the region's supply of recognized commercial timber is increased for an important market for hardwoods.

Heretofore, hardwoods were in very limited demand in that area. But now they make up about 75% of the raw material for the 160 tons-a-day additional pulp output.

ALDER WAS A FOREST "PROBLEM"—From a forest management point of view there are other advantages in using alder. Some woodlot and tree farm areas support nearly solid stands of this species. On a 30 to 40 year rotation, about one half the economic rotation required for native conifers, the hardwoods produce about the same volume per acre as the coniferous species.

Historically, Western alder has generally presented a forest management problem. Its tendency to quickly reproduce in thick stands on cutover lands on the Pacific Slope, makes it difficult in some cases to restock with the "more desirable" conifers or softwoods. Use of alder for pulp opens up forest opportunities for owners of woodlots and tree farms in the tributary areas.



HOW LOGS ARE PULLED OFF FLATBED TRUCK. Note strands transferring farmer logs—8 ft. alder—to transfer storage section of Longview barker-chipper plant.

The Forest Service estimates western Washington's supply of alder at 4 billion bd. ft., with about one-eighth in Lewis County, within 50 miles north of Longview.

HARDWOOD PREPARATION—STARTED LEARNING ABOUT IT EARLY—A small-log hardwood barker-chipper section was installed a couple years ago in anticipation of the NSSC addition and to make hardwood chips for the kraft process for bleached paperboard. This unit provided further increased wood utilization at the integrated Longview branch.

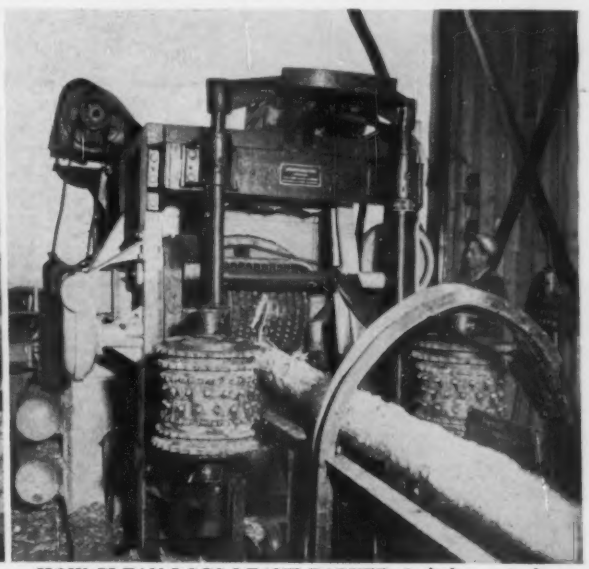
The new installation handles and processes short logs (8 ft.), ranging from 6 to 20 in. diameter. Bark is mechanically removed. The clean wood then is converted into chips and transported to the unit's storage silos.

This plant sets near the kraft mill and connects by belt conveyor to the kraft digester building. All other barkers and chippers of Weyerhaeuser's Longview operations are within the Lumber Division's operating area, the chips reaching the pulp plant by long belt conveyors.

Various species of hardwoods have been processed by the small-log barker and chipper. This section operates two shifts a day. Logs arrive by truck or rail, are transferred to infeed end of a 4-section, 2-chain transfer deck. At outfeed end of this deck they discharge into a steel slope-sided conveyor leading up an incline, through a hydraulic washer, to feed rolls immediately ahead of the bark removal unit—a Soderhamn Swedish-built Anderson debarker.

HOW BARKER WORKS—This ma-

ON WAY TO SWEDISH-TYPE BARKER. Pacific Coast alder logs leave horizontal conveyor—two strands of Link-Belt SS-291 chain—and head up incline on C-102½ Promal chain.



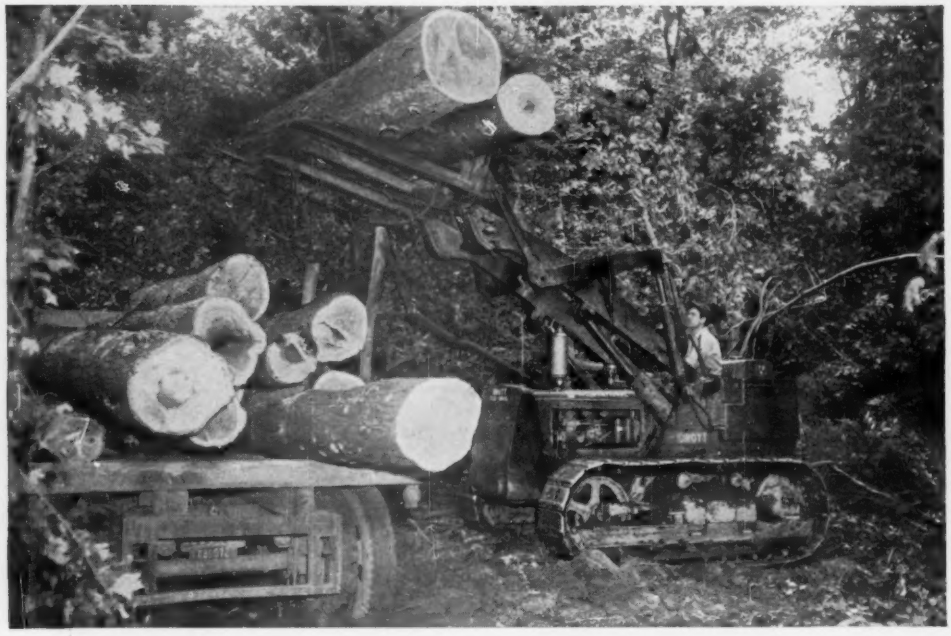
HOW CLEAN LOGS LEAVE BARKER. Soderhamn-Anderson mechanical barker uses pneumatically cushioned tools. Does almost 100% job, taking little wood.

A PICTURE REPORT OF

INTERNATIONAL POWER *in action!*

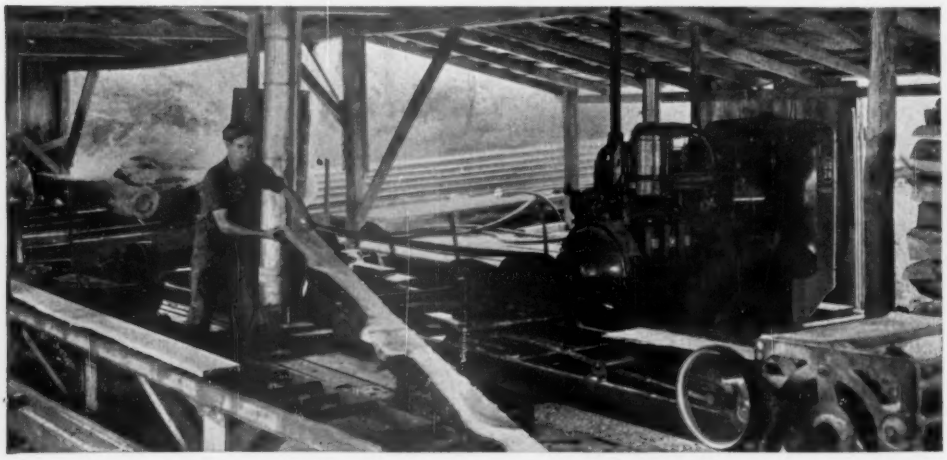
Boosting job production everywhere

41 hp skids 500 bf—At Monticello, Florida, Glover Lumber Co. produces 750,000 board feet of oak and pine lumber, plus 250,000 bf of magnolia, gum, beech and other hardwood crating material yearly. All skids from swamp to truck landing are handled by 41 dhp International TD-9. "It averages about 500 log ft per load," reports Owner J. H. Glover. Magnolia log being snaked here is 16 ft long, measures 441 log ft.



Loads 2000 bf in 10 minutes—A. Eklund & Sons, Inc., Stamford (New York) loggers, use their International Drott TD-9 for "all heavy work" around their operation in the Catskill mountains. Unit loads 1,000,000 board feet of hardwood yearly . . . interchanges log fork with skid-shovel to build log roads. Partner H. A. Eklund says, "Safety factor, plus time and labor saving, make our TD-9 a real pay machine."

In 3 years, 3 days—that's all the downtime Art Ayers, Moulton, Alabama, has had with this TD-14A. Rig builds mountain logging roads to bring out 4 million board feet of pine and hardwood yearly.



90¢ produces 1500 bd. ft.—Near Oakland, Maryland, this International-powered sawmill produces 1500 ft. of 100% hardwood per hour. Owners, E. C. Grimm Lumber Co., report fuel costs only 90¢ hourly. Mill handles logs 16 inches to 5 ft. in diameter, up to 16 ft. long. Timber is selectively cut from 6,000 acres, then snaked to mill by TD-14 and TD-18 tractors.

Towing yellow pine lumber from mill to drying yard is just one of many jobs Arkansas & Louisiana Lumber Co., Emerson, Arkansas, handles with their International wheel tractor. Unit stacks 30,000 board feet per day . . . 750,000 bf per year. Individual loads average 1500 bf, weigh 7,000 lbs. Rig also uses dozer blade to clean up bark and sawdust . . . is available to skid logs from woods. It develops 39 dhp.

Snakes 8,000 bd. ft. daily—that's average output for Griffen Bros. TD-6 on pine salvage job near Willacoochee, Georgia, "Production is outstanding; downtime very low," says Partner J. T. Griffin.

International Industrial Power

INTERNATIONAL HARVESTER

A machine size for every job . . . see your nearest INTERNATIONAL DISTRIBUTOR for details.

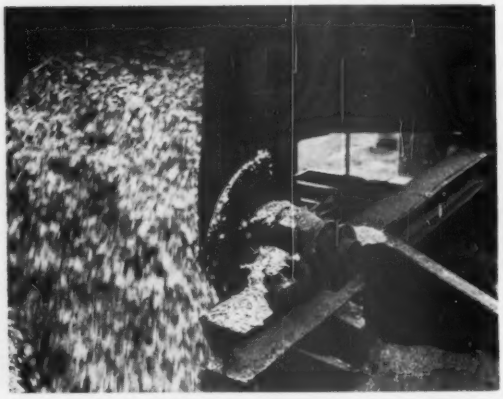
PAYSCRAPERS
13 yds. and 13½ yds.

WHEEL TRACTORS
6 Models . . . . 9 to 59 dhp

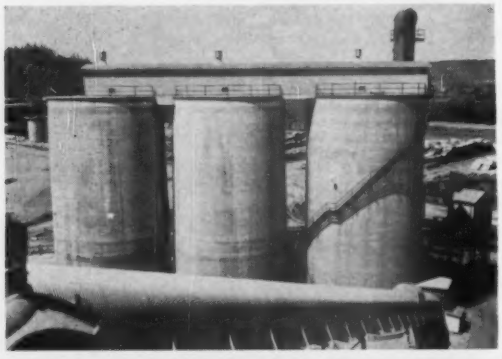
CRAWLER TRACTORS
8 Models . . . . 40 to 200 hp

DIESEL, GAS ENGINES
18 Models, 16½ to 208 hp

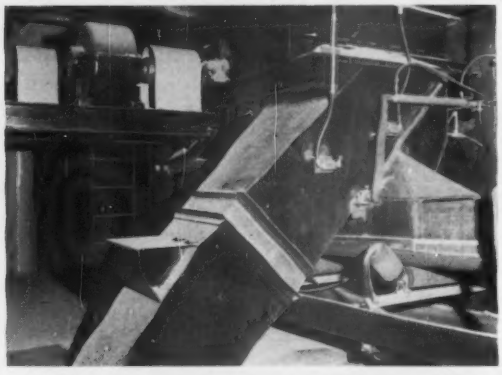
ALSO: International Drott Loaders . . . International Scrapers, Bottom-Dump Wagons . . . and International Superior Pipe-Boom Tractors.



LEAVING CARTHAGE CHIPPER. Double-strand Link-Belt H480 chain transporting chips in Weyerhaeuser hardwood chipping plant to bucket elevator.



WHERE NEW CHIPS ARE STORED. Three hardwood chip silos, each of 580-ton capacity, barker at right, and chip conveyor leading to kraft-NS digester building in foreground.



WHERE HARDWOOD, SOFTWOOD MEET. This Link-Belt stationary tripper is located en route to digesters at Weyerhaeuser new addition, as Douglas fir and hardwood chip lines converge.

ON WAY TO PULP MILL. Hardwood chips enroute from storage to Weyerhaeuser kraft digester building on 36 in. U.S. Rubber belting and Link-Belt troughing rolls.

chine has horizontal feed rolls and vertical guide rolls for centering logs while moving them through a rotating ring of the debarking chamber. Eight round-edge stellite-tipped debarking tools, mounted along inner circumferences of this rotating ring, bear against the log with sufficient pressure to squeeze off bark as the tools spin around the log. Each tool is backed by a pneumatic actuating piston. Compressed air from an Ingersoll-Rand compressor is introduced to the piston from a stationary distribution chamber to simultaneously extend all tools under equal pressure.

The barker operator introduces compressed air to provide appropriate pressure—high enough to keep debarking tools from riding over the bark, but low enough to keep the tools from penetrating the wood.

These pneumatically cushioned tools, according to Vern Mauerman, wood preparation supt., remove practically 100% of bark and take little or no wood along with it. The tools follow log contours, even riding up over limb bulges, an important factor in removing bark from broadleaf species.

HOW CHIPS ARE MADE AND HANDLED—Barked logs go to a 96 in. 10 knife Carthage chipper supplied by Ray Smythe. It is powered by a 327 rpm 600 hp General Electric engine type synchronous motor. A Louis Allis generator provides direct current.

A Link-Belt chip handling system follows. It takes chips to storage silos (three) via bucket elevator and ultimately delivers them to digesters.

The concrete storage silos taper from bottom to top to eliminate clogging and hang-ups. Vertical distance from the base to top of the steel cone is 24 ft. There the concrete shell has inside diameter of 40 ft.; 44 ft. higher at top of silo, the shell has inside diameter of 39 ft. Each has 68,000 cu. ft. storage area, capacity for around 580 wet tons of chips.

Link-Belt feeders at base of these silo cones discharge onto a belt conveyor which transports chips 500 ft. to the digester house. It discharges hardwood chips in controlled quantities to the kraft digester chip-filling belt which also carries Douglas fir chips arriving from other sources. Douglas fir-hardwood chip mixtures, in different ratios, are used for making NSSC unbleached corrugating medium and bleached sulfate board.

The flow of hardwood chips from storage is controlled from the digester house by regulating speed of feed table, driven by a Link-Belt PIV unit through Pacific-Western reduction of 100-to-1 ratio.

Chip conveyors are Link-Belt with 36 in. U.S. Rubber Co. Giant belting. Corrugated aluminum houses main conveyor extending from No. 1 chip silo to digester house.

Bark removed from the logs moves by gravity to a chevron conveyor belt taking it from the barker to a Sumner 35 hog. The hogged bark enters another conveyor taking it to temporary storage for subsequent removal by dump truck.

In the digester house comes the important step of proper mixing of hardwood and Douglas fir chips. But that is a part of the story that properly belongs in the description of the pulping process. Turn to the article, in the forepart of this issue—"How Semi-Chem Ties in With Kraft" for the rest of the new Weyerhaeuser story.

Pictures of Mr. Masserman, wood preparation supt., and of Bruce Ferguson, pulpwood buyer, appear with other Longview personnel in that article.

Pine Beetle Epidemics Threaten South

The Southern pine beetle, a major insect enemy of Southern pine trees, as reported in PULP & PAPER in Dec. issue (page 109) is staging a strong comeback in several Southeastern states.

"An epidemic may be in the making," warns the Georgia Forestry Commission and the U. S. Forestry Service. Experts, they said, are fighting epidemics in Alabama, Mississippi, Tennessee, North and South Carolina and in the Chattahoochee National Forest in northwest Georgia.

Dr. Robert P. Harrison, of the Forest Service, said pitch tubes scattered up and down tree trunks are early evidence of attack. Needles turn yellow and drop and the tree dies. He added: "Periodic, widespread epidemics of the pine bark beetle are responsible for the destruction of more merchantable pine timber in the South than any other agency."

Recommended treatment: removal of infested trees and the spraying of all unsold and unused wood with an oil solution of benzine hexa-chloride, containing one-fourth of one percent of gamma isomer.

During the very dry years of 1954 and 1955, Ips engraver beetles have stepped up their numbers and made heavy attacks on pine in the Southeastern states. The flare-up is truly epidemic in some places. Central North Carolina, South Carolina and southern Georgia have severe outbreaks.

An aerial survey of southern Georgia, one of the hardest hit areas, showed 65,000 cords of standing timber killed by insects. This figure does not include the large volume of timber killed and salvaged since June 1954, when the killing was first noticed. Much of the 1954 kill remained unsalvaged and was a complete loss. Anything that weakens trees invites beetle attack—fire, windstorms, logging operations.

W. J. BAILEY, (left), **G. W. E. NICHOLSON** (below, left), **WILLIAM SWINDELLS** (below, right)

Paper and Board Men Take Over Top AFPI Offices

W. J. BAILEY, Vice Pres., West Virginia Pulp & Paper Co., has been elected new President of American Forest Products Industries Inc., national Tree Farms sponsor.

G. W. E. NICHOLSON, Exec. Vice Pres. in charge of Planning and Expansion, Union Bag & Paper, is one of AFPI Vice Presidents.

WILLIAM SWINDELLS, Vice Pres. and Director of the new Western Kraft Corp., Albany, Ore., is the other AFPI Vice President. However, the lumber industry can claim him, too, as he is Pres. of Willamette Valley Lumber Co.

PAUL KOENIG, Treasurer of AFPI is another paper industry man, with P. H. Glatfelter Co.

U. S. Forest Service Report Subject of Paper Week

America's supply of pulpwood will be one of the major themes of the 22nd Annual Meeting of the American Pulpwood Assn., when it convenes on Feb. 21-24.

Other topics of interest to pulpwood management will be:

Weather Modification in Action;

Multiple Use of Industrial Forests;

Wood Preparation, Hauling and Handling which will include technical sessions on What's New in Power Saw Use; Trends Toward Rubber Tire Tractor Logging; Positive Control Grapples for Pulpwood Handling; Late News on Portable Barkers;

Training and Safety, under which will be discussed the distributors' approach to power saw training; M&O's approach to safety for independent producers;

Industrial Forestry, which will cover industrial use of microwave and mobile radio and continuous forest inventory.

A major innovation will be the substitution of a president's reception for the annual dinner, which will provide an opportunity for members, their wives and guests to meet the new president and view industrial exhibits.

The half-day session on America's Supply of Pulpwood will feature a discussion on the U.S. Forest Service's Timber Resource Review. Comments will be made by a forest economist outside the Forest Service. Topping this will be a panel discussion.

Union Bag Sets Largest Planting; Plans For 12 Million Seedlings

Woodlands Division of the Union Bag & Paper Corp. is undertaking its largest reforestation job to date during the winter months. According to W. J. Bridges, Jr., Woodlands Division Manager, 12 million seedlings will be planted mostly by machines, on Union Bag land.

Also, 2,000 pounds of longleaf and slash pine seed will be broadcast across about 1,500 acres in an attempt to reforest by seeding.

JAMES B. LATTAY has been named Woodlands Mgr. of newly formed Carolina divisions of Riegel Paper Corp. headquarters at Acme, N. C. He formerly headed Riegel Woodlands Corp. before merging of all subsidiaries.

More Mechanization Coming in South

Harry Brandt, writing in the Monthly Review of the Federal Reserve Bank of Atlanta (Ga.), says: "Most immediate problem confronting the Southern pine industry is the increase in the minimum hourly wage from 75 cents to $1. To offset this, Southern pine producers will be forced to mechanize further. Since the nature of small sawmilling operations severely limits applications of machinery, the larger mills are likely to become more important." He pointed out many mills are making chips for pulp mills.

Biggest Year in Canada

The past year has been the most active for woodlands operations in the annals of the Canadian industry, thanks to record demand at the mills. Quebec alone will show an increase of 10% in production. Most other provinces show similar increases.

Due to greater use of mechanical equipment, the pulpwood harvest starts earlier in the winter season than a few years ago.

Canadian International Paper Co. estimates that its cut in 1955 was 2,235,000 cords, with the 1956 budget calling for 2,470,000 cords.

Production per man in Eastern Canada has been increased about 20% by increased mechanization, especially the power saw.

TAYLOR'S

Pulpwood Dream

...a sensational new machine... specifically made for loading across the car

The first machine completely engineered for across-the-car loading, the Pulpwood Dream follows Taylor's time proven principles of simple yet rugged design. It travels where a loaded truck will go—handles any load fast, yet is under perfect control of the operator at all times. Completely safe, unbelievably easy to operate, and equipped with power steering. All loading can be accomplished from ONE SIDE of a railroad car. Don't be satisfied with less than the "Pulpwood Dream," the finest machine of its kind in existence.

A new concept in handling pulpwood; safe, fast and easy to operate

Before you buy any wood-handling equipment, call or write TAYLOR. See the Pulpwood Dream—the first machine completely designed for across-the-car loading. Another in a famous line of machines for all uses from Taylor's "Dream" factory.

TAYLOR MACHINE WORKS
LOUISVILLE, MISSISSIPPI

Link-Belt Speeder and J. I. Case Name Sales Executives

C. M. BASILE, Vice Pres. of Sales and Mfg., Link-Belt Speeder Corp., announces appointment of N. V. (NORB) CHEHAK (left) as Asst. Sales Mgr. In his new duties at Cedar Rapids, Ia., Mr. Chehak will aid Sales Mgr. G. W. Rowand in marketing Link-Belt Speeder crawler and rubber-tired shovel-cranes.

The appointment of J. P. CODY (right) as Mgr. of Industrial Division of the J. I. Case Co., Racine, Wis., has been announced by C. G. Pearse, Vice Pres. in charge of Sales. Mr. Cody will supervise all activities in connection with promotion and sale of Case industrial tractors, Powerloaders, mowers and engine units. Mr. Cody succeeds George W. Iverson, recently retired after guiding the division 25 years. Mr. Cody, a law graduate of U. of Nebraska, has worked in many management capacities for Case for 35 years.

AMERICAN HOIST & DERRICK CO., St. Paul, Minn., have appointed G. O. BRITTON to manager of distributor sales, with responsibility for sales of their line of crawler and truck mounted cranes and excavators as well as hoists and derricks. He was previously sales manager of the Schield Bantam Co. American also announces two new series of cranes and excavators, 200 and 100 series.

NEWS OF WOODS EQUIPMENT

PETTIBONE MULLIKEN CORP. has a new sling attaching for their Cary Lift which offers pulpwood handling flexibility to operators handling heavy loads. New attachment reportedly eliminates hazards in pulpwood handling and is one of several optionals available with the Cary Lift. Others are an interchangeable fork with or without baler; and a new tower lift with a 17-ft. lift for loads up to 18,000 lbs. A new booklet tells all about the Cary Lift. Write for it to Pettibone Mulliken at 4702 West Division St., Chicago 51, Ill.

OLIVER and TERRATRAC crawler operators will find complete specifications on Carco winches adapted for their tractors in two new specification sheets published recently by Pacific Car and Foundry Co. They are available either from Oliver or Terratrac dealers or direct from Pacific Car at Renton, Wash.

For long chain life under brutal impact—

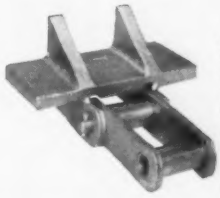
LINK-BELT SS-150+

Here's the pulpwood conveyor chain that outlasts them all!

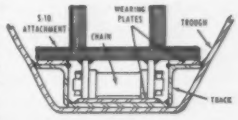
BECAUSE of corrosion, abrasion, terrific impact and heavy loads, pulpwood conveying requires the best in chain. Some users report SS-150+ has shown *over double* the life as compared to other quality chains in this grueling service.

The reason? It's another case of the right choice from the complete Link-Belt line. With 100,000-lb. average ultimate strength . . . plus hardening of pins, bushings, steel sidebars and joint bearing surfaces—SS-150+ is ideally suited for such jobs. In addition, a broad selection of attachments is available to solve your conveying or elevating problems.

Don't be satisfied that the chain you're now using is giving you maximum service until you've talked to a Link-Belt representative or authorized stock-carrying distributor. From our complete line of roller and silent chains . . . of cast, combination, forged and fabricated chains—he'll show you the one best-suited for your purpose. Ask, too, about Link-Belt's many attachments which allow economical adaptation to exact requirements.



S-10 attachment on rugged SS-150+ chain has broad sliding surfaces for longer wear-life for both track and chain. Impact from logs hitting attachment is absorbed by track rather than chain joint. And to combat corrosion fatigue specify cadmium-plated pins.



Logs drop to Link-Belt SS-150+ single-strand inclined conveyor with S-10 attachments at large paper company. Whereas ordinary chains lasted 6½ months on this job, SS-150+ went 2½ years without replacement.

LINK-BELT

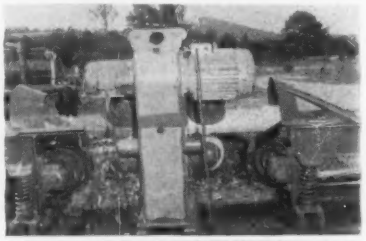
CHAINS AND SPROCKETS

LINK-BELT COMPANY: Executive Offices, 307 N. Michigan Ave., Chicago 1. To Serve Industry There are Link-Belt Plants, Sales Offices, Stock Carrying Factory Branch Stores and Distibutors in All Principal Cities. Export Office: New York 7; Canada, Scarboro (Toronto 13); Australia, Marrickville, N.S.W.; South Africa, Springs. Representatives Throughout the World.

STRICTLY PERSONAL— IN THE PULPWOOD WORLD

ALBERT ERNST, vice pres. and mgr., Southern Woodlands Div., St. Regis, has been named "Honorary State Farmer" by the Florida Assn., Future Farmers of America. . . . **ERNIE DAVIS** has been named to the newly created post of operating mgr. of Rayonier's Southeast Timber Division under Gen. Mgr. **"SANDY" MACARTHUR.** Ernie, his father and brother were in timber business on their own when they merged interests with Rayonier in 1940. Ernie was assistant manager of Rayonier woodlands in Georgia and Florida when named to his new post. He is native Floridian and graduate of U. of Florida. . . . **ED JONES JR.**, former forest supervisor, becomes assistant operating manager for Rayonier Southeast. . . . **DEWITT NELSON**, director of California's Department of Natural Resources, is newly elected president, by mail ballot, of the Society of American Foresters, succeeding **ELWOOD L. DEMMON**, of Asheville, N. C. . . . Industry men elected to the SAF council are **B. E. ALLEN**, assistant mgr., woodlands, Union Bag & Paper Corp., and **ED HEACOX**, managing forester, Weyerhaeuser Timber Co. . . . **CHARLES D. SCHULTZ**, head of C. D. Schultz Co., forestry consultants in Vancouver, has appointed **GORDON ROOT** to take charge of public relations in **PETER HALL'S** timber management department. Mr. Root was formerly public relations manager for Columbia Cellulose Co. in Montreal.

J. V. GUNTER is Southern district sales mgr. for Baldwin-Lima-Hamilton Corp. shovels cranes and draglines, operating out of Atlanta. He succeeds **FRED MAUS**, who joined R. A. Young, distributor organization, Fort Smith, Ark. . . . **R. L. HOCK** has been named manager of American Cyanamid's Organic Chemicals Div. Fortier plant at New Orleans. He is succeeded as asst. plant mgr. by **J. I. DAVIDSON**, who was consultant on Cyanamid's new titanium dioxide plant at Savannah. . . . **EDWIN SPIEGEL**, president; **A. CONGER GOODYEAR, CHARLES W. GOODYEAR** and **JOSEPH M. ARNDT**, are Gaylord executives who have become directors of the parent Crown Zellerbach Corp. . . . **WAYNE E. ROBINSON**, formerly with Champion Paper & Fibre, now is tour foreman at East Texas Pulp & Paper. . . . **RICHARD W. O'DONNELL** is now asst. pulp mill supt. at Halifax Paper, Roanoke Rapids, N. C.



New Barker Proven in Trials

Distribution of its new Cambio barker by Soderhamn Machine Mfg. Co., follows a period of demonstration at Talladega, Ala., headquarters. Tried out for a year in Sweden, these barkers embody new principle and operate without air pressure or hydraulics, though entirely automatic. It barks up to 150 fpm. Two speeds are provided with push button control. Clean barking is reported on Southern pine, Southern hardwoods, and several species of West Coast woods, 2-in. to 12-in. diameter. A larger size is undergoing trial in Sweden. At top, Pulpwood being barked by Cambio barker, note spring-loaded conveyors for centering; below, View of log decks, heavy conveyor chain feeding Cambio barker.

Gaylord Sets Up New School Forests

P. M. Garrison, chief forester of Gaylord Container Corp., announces that his company has presented a 10 year renewable lease on 20 acres of developed forest land to each of 11 high schools of Livingston Parish, Louisiana. Known as High School Community Forests, administered by a school committee, they are to serve as an outdoor classroom and laboratory to teach tree farming. Of gross revenue, 75% accrues to the school for school activities and scholarships, and 25% will be used to pay ad valorem tax on the land and severance tax on products removed from the forests.

Private Industry Does Good Job!

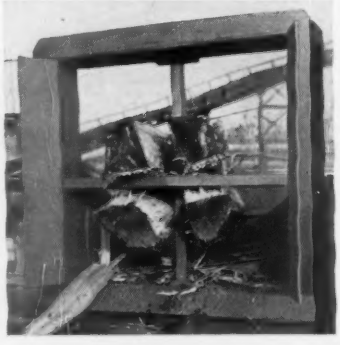
Of Crown Zellerbach's 635,000 forest acres in the U.S., less than 50 have been lost to fire in the last three years.

Convert Logs into HIGH-QUALITY CHIPS

with Carthage Log Barkers, Log Splitters, Log Chippers, Slab Chippers, Chip Screens

For Example:

CARTHAGE HYDRAULIC LOG SPLITTER quarters the log with one stroke — and ejects the log so that the machine is always clear for incoming logs. Simple, heavy-duty hydraulic controls with full safety features. Complete range of sizes for logs to 38" diameter and 6' 6" length.



Write for Complete Information

CARTHAGE MACHINE COMPANY CARTHAGE, NEW YORK

West Coast: Ray Smythe, 501 Park Bldg., Portland 5, Ore.

C. G. McLAREN, now Vice Pres. in charge of all National Container mills. Will base at Jacksonville, Fla.

McLaren Moving to "Jax"; Edwards Plans Retirement

Because of fast-growing operations and interests of National Container Corp. in the South, additional office space is being built in Jacksonville, Fla., for that company, and some of the New York staff will move there.

One new resident will be C. G. McLaren, who is now vice president and mill coordinator for National. He started with the company in Wisconsin, where he has had a notable career. He was former woodlands mgr. for National Container of Wisconsin, and later v.p. and manager of the Tomahawk, Wis., mill.

With the Florida-Georgia operations being greatly expanded, since startup of the Valdosta mill, William T. Webster, vice president, will be able to devote his attention exclusively to the big mills in Jacksonville and Valdosta. These mills have capacity for about 1,000 tons daily, twice that of the three operating northern mills.

Albert H. Edwards, a leading vice president of National, who has maintained his office and residence at Jacksonville, is planning on retirement next year.

Sales Execs for Bolton

John W. Bolton & Sons, Inc., manufacturers of machine knives and paper mill equipment, announces promotion of ARTHUR G. SCHWARZENBERG (left) to newly created position of Product Sales Mgr., responsible for coordination of activities related to promotion and sales of all Bolton division products. With Bolton since 1936, he was Mgr. of Emerson Mfg. Div.

LAWRENCE R. MITCHELL (right), Sales and Service Engr. with Bolton and its Emerson Mfg. Div. since 1937, has been promoted to Emerson Division Product Sales Mgr., in charge of sales activities of all products in the stock preparation and allied lines.

THEY DESCRIBE NEW CONTROL GADGETS. Panel at Pacific TAPPI meeting (l to r): CLARE HUME, Publishers' Paper Co., Oregon City, Ore.; PAUL HENRY, Crown Zellerbach, West Linn; KENNETH BYINGTON, CZ, West Linn; JOHN I. LEWIS, Longview Fibre Co.; Mrs. LUELLA JOHNSON, Puget Sound Pulp & Timber Co.; A. C. SILLIMAN, Kraft Mill, Weyerhaeuser, Everett; J. W. LARIVEE, Weyerhaeuser, Longview; J. F. FARRINGTON, Scott Paper, Everett; ROBERT W. WEAVER, Shelton Div., Rayonier Inc.

Tell of Nine New Methods for Controls

● James F. Farrington described how depositable pitch level is measured at Scott Paper Co., Everett, Wash., to avoid mill problems introduced by pulping lodgepole pine, at a recent Pacific TAPPI meeting in Longview, Wash. The method involves collecting pitch on a rotating stainless steel wire disc in stock flow at the regulator boxes. The amount of pitch picked up serves as an index for predicting expected pitch deposition from the pulp.

Ken Byington, Crown Zellerbach Corp., West Linn, Ore., demonstrated a simple process for measuring comparative force required to slide supercalendered coated paper—a "slipperiness" test. A sheet is laid, coated side down, on a standard surface and a 500-gram weight placed on it. A cord from the horizontal sheet extends over a pulley. The amount of weight required on the hanging string to move the sheet indicates surface "slipperiness" index. According to Mr. Byington, satisfactory sheets require about 30% more pullweight to move them than do the unsatisfactory sheets.

Paul Henry, Crown Z, West Linn, demonstrated use of an instrument developed at Time, Inc.'s Graphic Arts Institute, Springdale, Conn., for measuring compressibility and resiliency of printing papers. This instrument approximates the pressure range to which paper is subjected between impression cylinder and backing roll of presses. He stressed the importance of resiliency in printing papers.

Clare Hume, Publishers' Paper Co., Oregon City, presented a laboratory method developed at that mill for pulp chlorination which simulates chlorine tower operation. The system, devised because of high chlorine demand and amount of time consumed in making up chlorine water, involves using 3-in. diameter by 36-in. long pyrex pipe closed at each end with stainless steel flanges and Teflon packing. Weighed quantities of pulp are placed in the cylinder and weighed gaseous chlorine (from one-pound lecture bottle mounted on scales) added at bottom of cylinder to diffuse up through the pulp. The contents are agitated by tumbling until chlorine is consumed, as indicated by diminished gas pressure on the cylinder. Upon completion the sample is removed and tested.

Mr. Hume reported the method to be accurate, rapid, clean and free from liberated fumes.

Measuring odor in paper by determining permanganate demand of distillate from the paper was reported by John I. Lewis, Longview Fibre Co.

Other control methods discussed at Longview: Determining soda loss in lime mud to more closely control operation of lime kilns at Weyerhaeuser kraft mill, Longview, by J. W. Larivee; use of Fisher electrophotometer, equipped with red filter, to measure green liquor clarity at Weyerhaeuser, Everett, by Orlo Silliman; procedures for determining ash and minerals in pulp by use of a flame photospectometer at Puget Sound Pulp & Timber Co., by Mrs. Luella Johnson, jointly authored with Fred R. Foley; a rapid total solids determination for concentrated ammonium bisulfide spent liquor at Shelton, Wash. division of Rayonier, by Robert W. Weaver.

Dr. I. H. Isenberg, Institute of Paper Chemistry, presented a color movie, using phase control microscopy to show swelling of pulp fibers by various chemical reagents. Chairman John McEwen, Weyerhaeuser kraft mill, Everett, presided; Harold C. Wall, Longview Fibre Co., was moderator.

Offers Herty Site

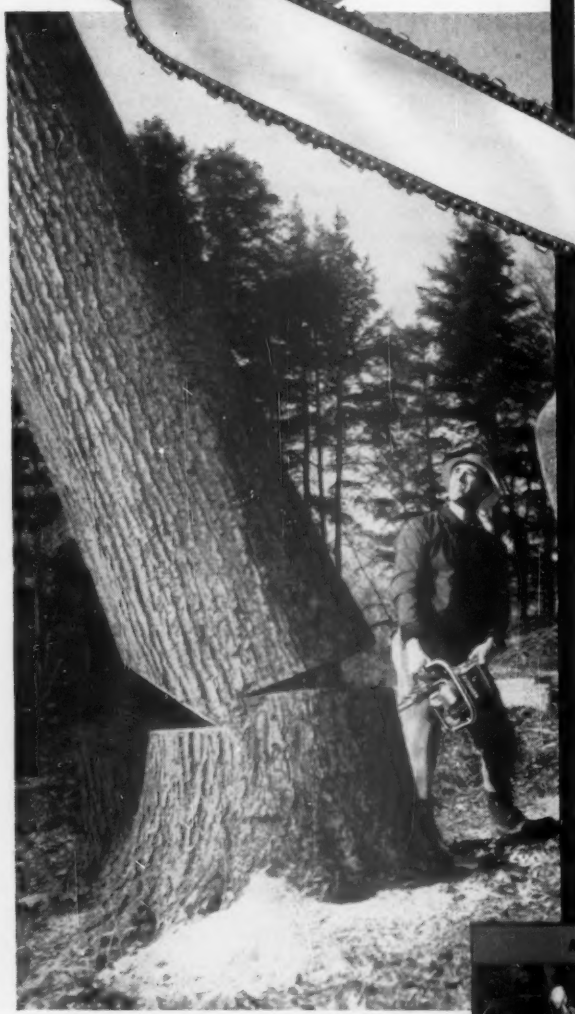
The Georgia Ports Authority has offered to lease Herty Foundation a site at port facilities in Savannah for the $250,000 "permanent home" planned by the group.

HOMELITE

5-20 CHAIN SAW

It's NEW... It's alive with power

5 HP—20 POUNDS



Never before has there been a chain saw with so much power per pound as the new Homelite Model 5-20. It has 5 big horsepower for faster cutting . . . a light, light 20 pounds for easy operation. What's more, it is the only chain saw that gives you a choice of attachments to do many different cutting chores easier.

The new Homelite Model 5-20 is precision built for quick starting, dependable performance, and low, low maintenance. Cuts in any position . . . it saves both time and money . . . brings bigger profits to woodcutting or clearing operations. Write for complete details or see your Homelite dealer.

See your dealer for details on the Homelite TIME PAYMENT PLAN

Packed with power, the new Homelite Model 5-20 Chain Saw brings down big trees six feet in diameter, cuts through 20" trees in 20 seconds without forcing or jamming. Anyone can operate it . . . no experience necessary.

MEETS ALL THE NEEDS OF THE PROFESSIONAL WOODCUTTER

Interchangeable Blades add versatility to the new Homelite 5-20 Chain Saw. For felling, bucking, limbing or plunge cutting, there's a hard track blade for every requirement. Straight blades available from 14" to 60", bow saws 14" and 18".

Bucking is easier on man and saw when a Homelite 5-20 goes to work. Takes less time than ever before. The 5-20 stands up under the grind on any job . . . job after job.

Underbucking takes less effort and is just as simple as bucking. The 5-20 is easy to handle upside down or in any position . . . and there's no loss of power.

HOMELITE

7701 RIVERDALE AVENUE • PORT CHESTER, NEW YORK

A DIVISION OF TEXTRON AMERICAN INC.

Manufacturers of Carryable Chain Saws • Pumps Generators • Blowers

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1 ¼ Miles of Stainless Pipe Ends Pollution at "Rapids"

Sulfite pollution has ended at Wisconsin Rapids as spent sulfite liquor that formerly discharged into the Wisconsin River is now pumped through a 1¼ mi. electrically welded stainless steel pipeline to two soil filtration ponds, one of them as big as a college football field.

"Hereafter all collectible liquor from this sulfite mill of Consolidated Water Power & Paper Co. will either be utilized for such purposes as roadbinder or else be disposed of by soil filtration," said Stanton W. Mead, company president. "None will be discarded to the stream."

Hunter's Island was selected for the soil filtration ponds after consultation with geologists. A causeway and bridge had to be built from the west riverbank to transport heavy earth-moving machinery to the job. A 4-in. Type 304 stainless steel pipe 7,100 ft. long—more than 1¼ miles—was supplied by Felker Bros. Mfg. Co. and connected with pumping capacity to move 200,000 gals. each 24 hours. The pipe is in 36 ft. lengths—without circumferential butt welds.

INDUSTRY LEADERS MEET: American Cyanamid's President K. C. TOWE (left) and JAMES R. LIENTZ (right), Res. Mgr., Savannah Operations for Union Bag & Paper, enjoy themselves at Cyanamid party.

TOP MEN AT NEW SAVANNAH PLANT for American Cyanamid (l to r): GEORGE RUSSELL, Asst. Mgr. of Pigments Division; W. J. CAUWENBERG, Tech. Div. of Pigments Div.; JACK ALLEGAERT, Gen. Mgr. of Pigments Div.; LOU ROBBINS, in charge of Mfg.; and EMIL HLADKY, Plant Mgr.

South Gets New TiO_2 Plant

● American Cyanamid Co.'s new $15 million titanium dioxide plant on the banks of the Savannah River was dedicated before press and public in December, with Cyanamid's President Kenneth C. Towe and Georgia's Governor Marvin Griffin as leading participants.

Also present were Cyanamid's Vice President Robert B. Fiske and Jack Allegaert, head of the Pigments Division of the company, under whose direction the new plant will operate.

WHAT IS TiO_2?—Titanium dioxide is one of the strangest of all chemistry's miracles since it results from a process which turns one of the blackest of ores—ilmenite—into one of the whitest of pigment products. TiO_2 is rated at 98, two points below maximum whiteness and three points above newly fallen snow. It is used in a multitude of products from coated paper to golf balls and bed sheets.

The new plant is expected to turn out 24,000 tons a year. It is on the outskirts of Savannah on a two-mile tract fronting the Savannah River along 1,600 feet.

SAVANNAH'S INDUSTRIAL "CLIMATE"—Option on the property was granted to Cyanamid in 1951 for $1 a year, an example of the industrial "climate" Savannah is creating in its efforts to become an even bigger and more important industrial boomtown than it is already, largely as a result of pulpwood and papermaking.

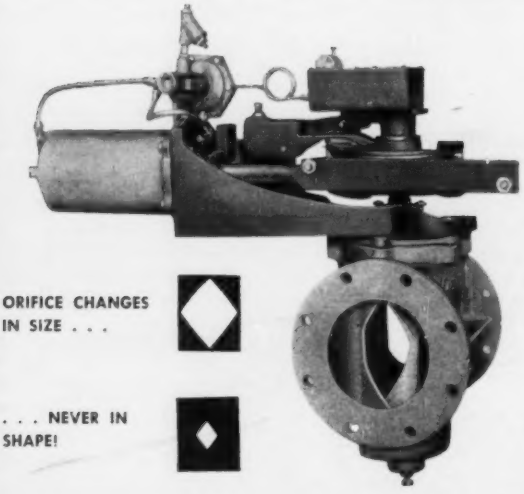
Emil Hladky, plant manager, said Savannah was picked for several reasons: Transportation by sea and rail

DeZURIK
Automatic
VEE-PORT
CONTROL VALVES

The diamond-shaped orifice of the DeZurik Vee-Port Valve gives it distinct advantages over ordinary control valves for handling pulp and paper stock.

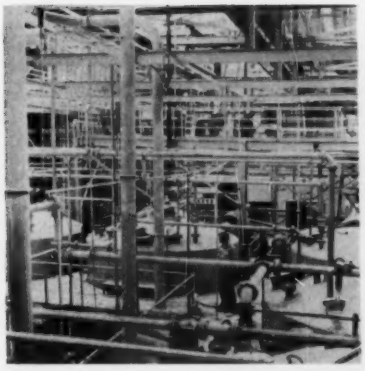
While the orifice increases or decreases in size, the shape retains the same proportions throughout the control range, producing accurate, dependable, stable control. Rate of delivery is constant at any setting — there is no "hunting" because there is no build-up, no packing or clogging.

Positioning type cylinder operators make DeZurik Vee-Port Valves the ideal choice for automatic level control, stock feed to fan pump, basis weight or caliper control and similar services.

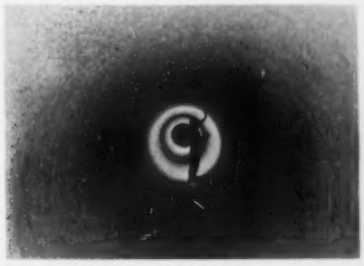


Either air or hydraulic positioning type operators are available. Where the ultimate in driftless control is desired, the hydraulic operator is suggested. With non-compressible hydraulic fluids, the operator maintains precise control—automatically—without lag. Write for details.

DeZURIK SHOWER COMPANY
SARTELL, MINNESOTA



LIKE GIGANTIC CROSSWORD PUZZLE. Interior of refining facilities at American Cyanamid's new Savannah plant, which turn out snow-white titanium dioxide for paper mills of South.



A CHECKER INSIDE CALCINER. A final check before this enormous rotary calciner at Cyanamid plant starts up. It changes TiO_2 to anhydrous form.

is excellent, the city has a large soft water supply for industrial use, labor supply was more than adequate and river flow is great enough to absorb effluent.

HINTS AT FUTURE EXPANSION—During his dedication speech, Mr. Towe hinted at future expansion, although he made no predictions as to when it might be expected.

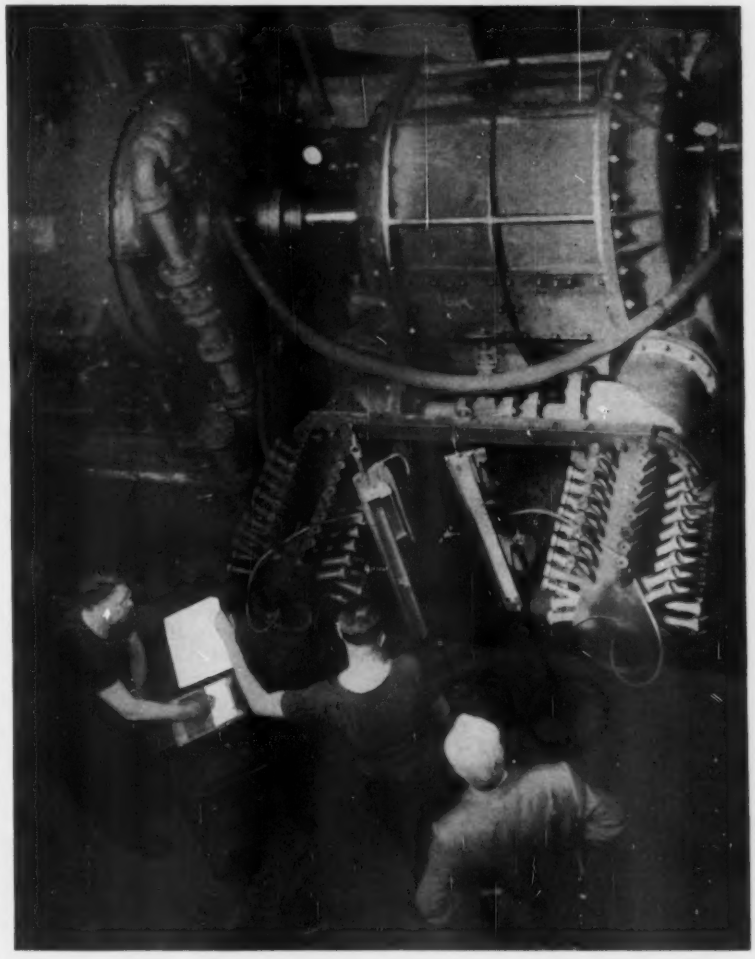
Gov. Griffin pointed out that the chemical and paper industries have been largely responsible for Georgia's $500 million industrial growth in five years.

In the South, at present, the chemical industry is growing at a rate of $2 million in new construction a day. Finishing touches are being put on $555 million worth of new plants and $225 million more are on the drawing boards.

Clinton Foods on Old Iowa Sawmill Site

Clinton Foods Inc., suppliers of starch for paper and board making, has a forest industry background—its plant at Clinton, Ia., is built right on the site of the old C. Lamb & Sons logging mill. This is on Beaver Slough, a part of the Mississippi River.

Rated performance of every Nash Vacuum Pump is assured by this precise laboratory test



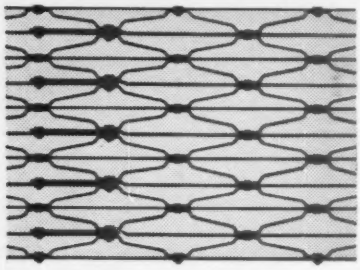
Rated capacities of Nash Vacuum Pumps are not theoretical. Every Nash Pump is tested individually. Air capacity is determined by delivery thru accurately machined and calibrated orifices. Related vacuum is measured by precise mercury column, and horse power is recorded electro-dynamically. Records of these tests are retained by us, and certified copies are available to Nash Pump owners.

That is one of the reasons why Nash Vacuum Pumps are installed in over a thousand leading Paper Mills. An engineer from Nash will be glad to survey your mill, and make recommendations, entirely without obligation to you.

NASH ENGINEERING COMPANY

440 WILSON ROAD, SO. NORWALK, CONN.

THE
MANY-PURPOSE
FLOORING
FOR PAPER MILLS
★
IRVING GRATING



In every step from log to paper you're on sure footing with IRVING open-grid steel and aluminum flooring.

IDEAL FOR

Walkways
Heavy-duty, cement-filled armouring
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Catwalks
Stairways
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Flooring and platforms around machines, pipes, beaters, combiners, digesters

KNOWN FOR

- Safest walking and wheeling surface
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PLUS

More than 50 years of engineering and manufacturing experience.

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Custom-Built to Your Specifications
Prompt Delivery

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ESTABLISHED 1902

OFFICES and PLANTS at
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PULP & PAPER NEWS FROM CANADA

ORDERS PAPER MACHINE—Sidney Roofing & Paper Co. Ltd., Victoria, B.C., has ordered a new Black-Clawson 120 in. trim machine to produce a variety of grades of paperboard, at 60 tons per day at speeds up to 400 fpm. The new machine will be comprised of six vats, a suction return drum press, three primary presses and three main presses, one a reverse press. A unique dryer arrangement, combining both double deck horizontal dryers and vertical stack dryers, will be used.

GOES TO HARDWOODS—Hinde & Dauch's plant at Trenton, near Toronto, Ont., is being converted to the use of hardwood pulp for the manufacture of various grades of paperboard, replacing straw as a raw material. An initial capacity of 50,000 tons is expected by the end of 1956.

CANADA MAKES 800 TYPES OF PAPER—More than 800 varieties of paper are manufactured in Canada today, according to Frank N. Youngman, chairman of the board of directors, Crown Zellerbach Canada Ltd. "Privately owned forests in Canada cover less than one-thirteenth of the total forest area," he said. "Every Canadian is thus owner and landlord of most of our forests."

WARNING TO NEWSPAPERS—R. M. Fowler, president of Newsprint Association of Canada, warned that since Canadian mills are already operating at 102% of rated capacity and are unable to keep pace with demand, some consumers in North America may be in "real distress" in the future.

In the past three months American newsprint consumption has been at an annual rate of 6,750,000 tons with publishers facing heavy Christmas demands for advertising. Total new supply for U. S. consumers in 1955 totalled only about 6,400,000 tons. Consumption will have to be limited to this amount plus what can be taken from stocks. Mr. Fowler predicts Canadian capacity will increase by 800,000 tons in 1955, 1956 and 1957 through investment of $150,000,000, and U. S. capacity will increase 600,000 tons.

The press uproar in U.S.A. over the price increase may result in discouraging critically needed expansion of newsprint tonnage, said one Canadian executive. Costs for Canadian mills, by a Montreal survey, are conservatively estimated to have increased 35% since 1946.

When this year's wage boost is fully effective, average wage will have climbed from $1.58 in 1952 to $1.90, up 20%. Labor in woods and mill rep-

In Western Canadian News

RAY J. SCHADT (left), moves to Vancouver, B. C., to take over as Crown Zellerbach Canada Ltd.'s Vice Pres. in charge of Mfg. A graduate of U. of Washington, he had been Crown Z Res. Mgr. at Carthage, N. Y., Port Angeles, Wash., and St. Helens, Ore., mills.

ARCHIE C. McGUIGAN (right), recently appointed Mgr. of MacMillan & Bloedel Pulp Sales, made a trip to New York, Chicago and way points to meet sales agents for MacMillan pulps, Mead Pulp sales and Price & Pierce executives, and customers. W. D. M. (Monty) Marler is Asst. Mgr. M & B Pulp Sales.

Join B. C. Forest Products

JOHN R. W. GRIEVE (left), former Gen. Supt., Brown Corp., LaTuque, Que., recently taken over by Canadian International, has joined B. C. Forest Products Pulp Division as Res. Mgr. of its new mill-to-be at Crofton, B. C. A graduate of U. of Toronto, Mr. Grieve was Chief Chemist at LaTuque ten years before promotion to Supt.

DONALD H. BAKER, Tech. Supervisor and Asst. to Mgr., Harmac Division, MacMillan & Bloedel, has been appointed Asst. Mill Mgr. and Tech. Superivisor for B. C. Forest Products bleached sulfate mill, to be built at Crofton, B. C., in which Scott Paper has an interest. Before the war he was with B. C. Pulp & Paper Co., now Alaska Pine & Cellulose, was Consulting Engineer to the Sloan Commission on Forestry, and was with the Howard Simons engineering firm.

POOR LITTLE EAGLE (U.S. Press) cowers before big guns (rising newsprint price), as yet one more newspaper (this one the Los Angeles Times) takes a pot-shot at this titillating (to newspapers) situation.

resents 40% of newsprint production cost. So wages alone boosted costs 8%, about $10 a ton, or twice the highest recent price boost of $5.

Hooker's Key Men Named

For Big Canadian Expansion

Robert B. Noble has been appointed works manager and John B. Sutherland has been appointed sales manager for the new $11,000,000 Hooker Electrochemical Co.'s subsidiary chlorine-caustic soda plant now being constructed at North Vancouver, B.C.

With all British Columbia pulp and paper companies expanding, and several new mills projected in that province, as well as the plans for two or three more mills in Alaska, Hooker Electrochemical Co. has moved rapidly to provide chemicals and services to improve and facilitate services to these industries.

At the expanded Tacoma, Wash., plant, Thomas E. Moffitt, vice president in charge of western operations, announced appointment of George A. Gentes as assistant works manager and Robert M. Sherwin as assistant plant engineer.

ROBERT E. NOBLE (left), new Works Mgr. and **JOHN B. SUTHERLAND** (right), new Sales Mgr. for Hooker Chemicals Ltd., Vancouver, B.C.

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How can we stop corrosion?

Name_____
Firm_____
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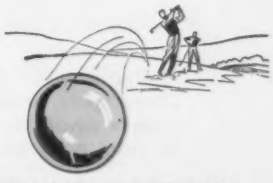
City_____ Zone____ State____

"We Stopped Corrosion at our Plant!"

"Corrosion was *rampant* inside and out before Truscon diagnosed our troubles and prescribed TRUSCON CHEMFAST, corrosion and chemical resistant coating with Devran (epoxy resin)."

● If you have *any* corrosion at your plant, stop it *now* before replacement costs eat gaping holes in your profits! Send coupon above—take advantage of Truscon experience and know-how.

Chemfast is a heavy-duty coating for protecting indoor and outdoor surfaces of wood, metal and masonry against moisture, acids and alkalis. It owes its toughness to Devran (epoxy resin).



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FERROUS and NON-FERROUS CENTRIFUGAL CASTINGS FOR ROLL SHELLS, COVERS, and LINERS

Here you'll find a skilled staff in completely equipped laboratories testing new materials, developing new processes, helping to make better castings for your specific requirements.

These improvements are directly translated into uniform, strong, close-grained ferrous and non-ferrous castings with extreme resistance to corrosion, heat, and abrasion. As another service, the Chief offers machining facilities for turning, boring, and drilling.

Bring your casting problems to the Chief's thoroughly trained specialists. These men are always available to apply their broad experience to your particular needs.

Chief SANDUSKY CENTRIFUGAL CASTINGS

FERROUS AND NON-FERROUS

SANDUSKY FOUNDRY AND MACHINE CO., Sandusky, Ohio

EQUIPMENT AND SUPPLY NEWS

BABCOCK & WILCOX CO. has three new bulletins from its Tubular Products Div. Heat exchanger and condenser tubes, seamless and welded, are described in bulletin TB-329B. Alloy mechanical tubing is featured in bulletin TB-360, for acquainting design engineers with advantages of mechanical tubing. A complete listing of type of tubing produced by B&W and various kinds of technical literature available on specific types of tubular products is given. Ask for bulleton TB-408 at their sales offices at Beaver Falls, Pa.

NIAGARA ALKALI CO. was recently formally merged into **HOOKER ELECTROCHEMICAL CO.** R. LINDLEY MURRAY, board chairman, said that J. CLARK CASSIDY, formerly president of Niagara Alkali, was elected a vice president and director of Hooker. Facilities of the merged company will be operated as the Niagara Alkali division of Hooker, and its $12,000,000 assets now raises Hooker's total to more than $100,000,000.

The **BLACK-CLAWSON CO. DILTS MACHINES WORKS DIV.**, has a new bulletin on polyethylene extrusion laminating machinery. Distinctive feature of three new models is the Gross-Dilts Heat Transfer Insert in the cooling drum for quickly setting the plastic film. Dilts assumes complete engineering responsibility for extruder-laminator installations. Ask for bulletin 19-DM from Dilts Machine Works, Fulton, N. Y.

CRANE CO. has redesigned and is marketing its No. 430 120-lb. brass rising stem double wedge disc gate valve, says J. A. DWYER, vice president of industrial sales div. The valve is recommended for steam, water, oil or gas lines, sizes from ¼ to 3-in.

NATIONAL ALUMINATE CORP. is now marketing a new low-cost, low-dosage coagulant and coagulant-aid. Rated as one of the most important discoveries in Nalco's 28-year history, Nalco 600, a polyelectrolyte, shows most promise in coagulating turbid river and surface waters for industrial and cooling use. It is recommended for waste water and paper mill treatment of water for general use and for settling in savealls.

GENERAL ELECTRIC has a new catalog on its complete line of G-E control transformers, designated GED-2767 which contains ratings, dimensions, product features, and model numbers. GE also has a new high-voltage, air-brake contactor approximately 25% smaller than the previous model.

VIPLAX PRODUCTS CORP., Beverly, N. J., manufacturers of Viplax rigid, corrosion resistant, standard also pressure rated, polyvinyl chloride pipe, has appointed H. E. OVERACKER as special representative to the U. S. paper industry. His offices are at 17 Battery Pl., NYC.

SIGNODE STEEL STRAPPING CO's. Autumn 1955 issue of "The Signode Seal" has some revealing articles on latest developments in shipping paper, as well as articles on better packaging, shipping and handling. Write to Signode at 2630 North Western Ave., Chicago 47. Tell them PULP & PAPER put you up to it.

ALLIS-CHALMERS MFG. CO. would like to send you a copy of their ACAP pump bulletin, 08B8328 which tells all about their ACAP pump for handling solids in suspension under variable capacity and head conditions. This pump is designed specifically for paper industry applications. Ask for this bulletin by writing 995 S. 70th St., Milwaukee, Wis.

CAMERON & BARKLEY CO. are now distributors for Multi-Amp, a portable high current test instrument manufactured by the Multi-Amp Corp. of Newark, N. J. This is practical and economical method for testing electrical protective equipment. CHARLES VON GLAHN, manager of Cameron & Barkley's Electrical Div., will coordinate sales and services of Multi-Amp.

GOODYEAR TIRE & RUBBER CO., has asked PULP & PAPER to warn all users of Goodyear latex products against winter weather caprices to protect their purchases from freezing. Goodyear says customers can help assure safe delivery of latex by anticipating requirements sufficiently in advance to permit them to get heated or insulated carriers.

SECO ENGINEERING & MFG. DIV. of Seco Safety Products Co. has a new model "In-Plant" fire truck featuring four major fire fighting guns, designated as S-356 Model. It carries carbon dioxide, dry chemical, water and foam. Write to H. L. STEFFENS at Seco, 1300 W. Fort St., Detroit 26, Mich., for catalog.

BOOKS! BOOKS! BOOKS! Problems of the rotary kiln as well as a new concept of the rotary kiln system are dealt with in "The Rotary Kiln" available for $3.50 from Azbe Publications, 8135 Forsythe Blvd., St. Louis 24, Mo.

THE PACKAGING INSTITUTE has issued its second edition of its Glossary of Packaging Terms, the "Language of a Ten Billion Dollar Industry." Its 323 pages contain standard definitions of trade terms commonly used in packaging. Single copy price is $6.75 from the Packaging Inst. at 342 Madison Ave., N. Y. 17.

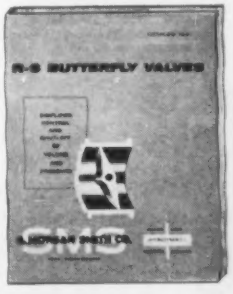
NOW YOU CAN SPECIFY STANDARD R-S BUTTERFLY VALVES FOR FASTER DELIVERY

R-S BUTTERFLY VALVES

When the delivery date is important, you can get faster service on standard R-S Butterfly Valves. Based on the results of previous experience, R-S Valves are now standardized. All components for those most commonly used, in sizes from 4" to 48", are carried in stock, ready for assembly.

R-S Butterfly Valves give you positive, dependable performance. You get the advantages of:

- complete control in all positions of normal regulating range.
- fast regulation and closure.
- minimum pressure drop that saves power.
- compactness and light weight at less cost.



This new catalog will give you complete dimensions, specifications, layout drawings and materials for all R-S Butterfly Valves in the pressure ratings that have been standardized to date. As others are added, new sections will be published. To get a free copy and assure yourself of future sections, contact your SMS representative, or write to S. Morgan Smith Company, York, Pennsylvania.

HYDRAULIC TURBINES · GATES & HOISTS · TRASH RAKES · PUMPS · ACCESSORIES
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ROTOVALVES · FREE-DISCHARGE VALVES · BALL VALVES · CONTROLLABLE-PITCH SHIP PROPELLERS · BUTTERFLY VALVES

S. MORGAN SMITH

AFFILIATE: S. MORGAN SMITH, CANADA, LIMITED • TORONTO

New Model Sutherland Cut in at Southern Mill

A new Sutherland Balance Flow refiner was cut into production at one of the big Southeastern paper mills in early December, replacing another refiner and reducing load on two other Sutherlands.

The new unit controls flow of pulp between refining elements, entirely independent of capacity or pressure.

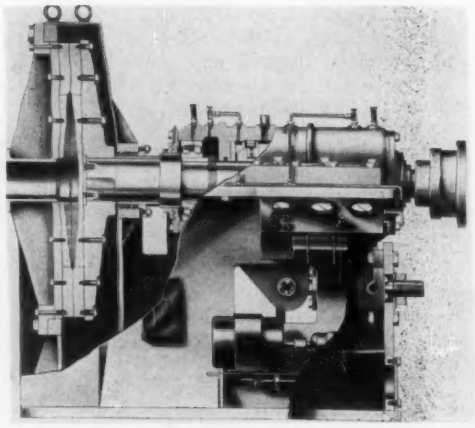
Control of the discharge, often referred to as "pressurized refining," allows the operator to control the throughput but provides no control within the refining zone. A free discharge refiner with inlet control regulates capacity by restricting the amount of pulp entering the refiner.

The Sutherland Contro-Flow combines both principles and adds a third that controls the flow through the discs. The flow through the discs is restricted at their periphery by a check ring. This check ring increases the pressure between the discs and holds the pulp longer in the working area.

The Sutherland Refiner Corp. says advantages of its new unit are: 1. controlled flow at the point where control is needed—between the discs, 2. accurate control of capacity for quality production, 3. quick and simple refiner adjustment, 4. rugged construction for continuous, heavy-duty operation, 5. compact construction and light weight, 6. lower power consumption, 7. efficient use of horsepower, 8. lower initial investment cost, 9. low installation cost, 10. lower maintenance costs, 11. easily remachinable discs, 12. only one packing gland that is readily accessible; no hidden packings, 13. all parts readily accessible, 14. flexibility in design and operation, 15. single rotating disc minimizes uneven wear, and 16. consistent stock quality maintained by constant pressure.

Sizes of the Contro-Flow are 48, 42, 36, and 28 inches.

The operating sequence is simple: 1. Open input valve to admit stock, 2. check discharge valve to be sure it is open, 3. adjust controls on control panel to desired settings. The Contro-Flow operates under constant hydraulic pressure. Adjustment is by movement of the rotating disc toward or away from the stationary disc. The bearing cartridge is moved by a hydraulic piston backward or forward through precision-machined ways that do not allow lateral movement.



NEW SUTHERLAND CONTROL-FLOW REFINER which cut into the production line at one of the big Southeastern paper mills in the first days of December. Initially, it took over throughput which had been handled by three older refining units, two of them older model Sutherlands. The power then was cut back to a fraction of capacity and it still handled all this load.

Morden Now Represented In South and Southeast

Appointment of Brandon Sales, Inc., of Greenville, S. C. as sales representatives in South and Southeast states for Morden stock preparation equipment is announced by R. Burke Morden, president, Morden Machines Co., Portland, Ore.

K. E. Fryfogle, president, Brandon Sales Inc., assisted by Brandon Sales' Southern representative, R. S. (Bob) Davis, and in cooperation with Morden personnel, is expanding activities to include Morden "Slush-Makers" (1,000 to 8,000 lb. batch sizes) for pulping, "Stock-Makers" for beating (a 300 hp. unit is recommended for big Southern mills), and "Stuff-Makers" for jordaning.

Morden Machines now offers "in-the-area" service to all U. S. mills through Brandon Sales, in the South, Orton Corp. in the East, Dan B. Chapman in the Midwest and Morden's home office in the West.

K. E. FRYFOGLE (left), Pres. of Brandon Sales, Inc., and **ROBERT S. DAVIS**, Southern Rep. for Brandon felts. They now also represent Morden Machines in South.

DuPont is Expanding Titanium Dioxide Output

Substantially increased production of titanium dioxide is planned by Du Pont.

F. H. Weismuller, general manager of the Du Pont Pigments Dept., said both Edge Moor, Del., and Baltimore plants will be expanded. The pigment currently is in short supply.

With a previously announced expansion at Edge Moor, this will increase Du Pont output of titanium dioxide by more than 25%. First new facilities at Edge Moor should be completed by autumn, the rest of expansion by 1957. A 1958 plant at New Johnsonville, Tenn., is planned.

Sonoco Opens New Texas Branch Plant

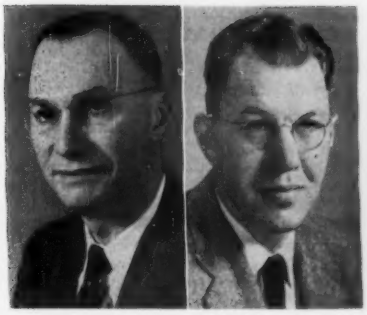
Sonoco Products Co. has officially opened a new branch plant in Longview, Texas. The plant is presently operating two spiral machines serving customers in the Southwest.

Executive Vice Pres. C. W. Coker, E. S. Reid, sales manager of the Construction Products Division, and Luther Stokes, assistant general sales manager of the Southern Division, attending the opening ceremonies.

One machine is turning out 8-in. Sonoairduct and the other is making 19-ply paper mill core used at Southland Paper Mills in Lufkin, Texas.

Another Company Plans Location in Dixieland

Walworth Co., valves and fittings makers, will build new Southeastern headquarters and warehouse, a modern 35,000 sq. ft. building, at 1600 Southland Circle N.W., Atlanta, Ga. M. H. Luttrell is Southeast mgr.



Promoted in Far West

RAY DUPUIS (left), now Res. Mgr., St. Helens (Ore.) Pulp & Paper Division of Crown Zellerbach. He was former Asst. Res. Mgr. at Camas; before that, at West Linn. He is a U. of Washington graduate, belongs to a family famed in Canadian and U. S. papermaking.

JOHN M. MILLER (right), promoted from Plant Engr. to Mgr. of Engineering at Camas CZ Mill, with broader responsibilities over engineering and maintenance under Res. Mgr. GEO. H. GALLAWAY and Asst. Res. Mgr. F. O. BOYLAN. Mr. Miller has been at Camas since 1936, is a grad of Oregon State College.

Col. Greeley Dies at 76

Col. W. B. Greeley, 76, died Nov. 30 at his Port Gamble, Wash., home following a half-century of national leadership in forestry and timber-industry affairs and as a world forestry authority. He received his bs degree in forestry at University of California in 1901, master of forestry from Yale in 1904, and held other degrees including doctor of laws.

In World War I he commanded 21,000 forestry troops operating 95 sawmills which produced lumber at the rate of around two million feet per day. He was chief forester of the United States, 1920 until 1928, when he resigned to become secretary-manager of West Coast Lumbermen's Assn., retiring in 1945. But he continued to participate in forestry matters.

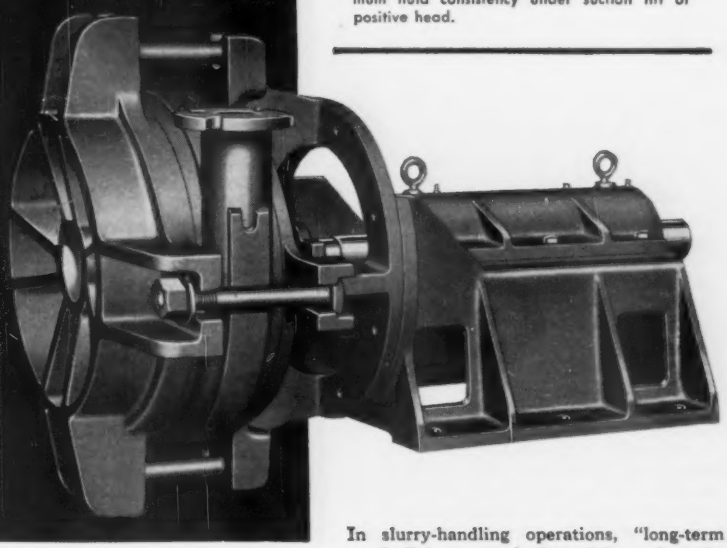
Supply Company Representative

JOHN E. WILBUR (left) new felt Sales Representative for F. C. Huyck & Sons will cover Indiana, Illinois, Iowa, Kansas, Missouri and Oklahoma. He's a chemical engineering grad from U. of Maine, specializing in pulp and paper. Formerly S. D. Warren Co. and Carton de Colombia, Colombia, S.A.

LEON E. SMITH (right) is new Sales Engineer for Rice Barton Corp. in New England and Middle Atlantic States

For Continuous Heavy-Duty Pumping

The Morris Type RX Pump shown below is a heavy-duty, low-speed all metal slurry pump expressly designed to handle abrasive slurries, chemical sludges, plant wastes etc. up to maximum fluid consistency under suction lift or positive head.



MORRIS
TYPE RX SLURRY PUMP

• Free Service. Morris Engineers will be glad to recommend the pump best suited to your needs for size, capacity, etc. Send necessary data today . . . include request for Bulletin 185.

In slurry-handling operations, "long-term service" is a meaningless claim unless the pump will work day-in and day-out with a minimum of maintenance time, trouble and expense.

Morris Slurry Pumps—with an established reputation for longer life—also incorporate in their design exclusive features which result in easier installation . . . fewer interruptions to service . . . less overhaul . . . fewer replacements.

To Provide Uninterrupted Service...

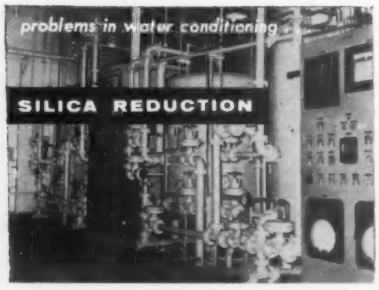
The gland is under suction pressure only. This reduces leakage and dilution . . . keeps harsh abrasives out of the stuffing box . . . practically eliminates packing troubles.

There are no internal studs or bolts. Caustic and corrosive solutions cannot seep past threads and cause maintenance headaches.

Impeller removed without disturbing the piping. You simply loosen 4 outside clamping bolts and pull off the end cover. This feature alone saves considerable time and labor.

MORRIS CENTRIFUGAL PUMPS

MORRIS MACHINE WORKS
Baldwinsville, N. Y.
Sales Offices in Principal Cities



For your protection buy

Cochrane's

experience

in demineralization

An impressive list of Cochrane 2-bed, 3-bed, 4-bed and mixed bed Demineralizer installations have been providing continuous protection for years in many outstanding high pressure power plants.

The illustration above is just one of many. Designed for a large paper company, it produces an effluent with a silica content of as low as 0.02 ppm and total dissolved solids of as low as 0.4 ppm. Cation units are 6′ x 6′ and anion units 6′ x 8′ providing demineralized water supply of over 100,000 lbs. per hour for 1200 psi boilers.

Demineralized water quality is superlative. Cochrane's progress in solving the many problems associated with demineralization is outstanding. This background is your assurance of satisfactory operation. Why not take advantage of it? Consult Cochrane first. Ask for Bulletin 5800-B.

A FEW MAJOR COCHRANE DEMINERALIZER INSTALLATIONS

- Large Oil Company Cap. 420,810 lbs. per hr. Automatic Control
- Aluminum Producer Cap. 387,000 lbs. per hr. Automatic Control
- Southern Paper Mill Cap. 405,000 lbs. per hr. Automatic Control
- U.S. Government Cap. 295,800 lbs. per hr. Automatic Control
- Textile Manufacturer Cap. 360,000 lbs. per hr. Automatic Control
- Automobile Mfr. Cap. 182,268 lbs. per hr. Automatic Control
- Utility Cap. 266,400 lbs. per hr. Automatic Control
- Pharmaceutical Co. Cap. 29,880 lbs. per hr. Automatic Control
- Chemical Mfr. Cap. 15,000 lbs. per hr. Manual Control

COCHRANE CORPORATION · WATER AND HEAT ENGINEERS · SINCE 1863 · PHILADELPHIA

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Demineralizers • Hot Process Softeners • Hot Zeolite Softeners • Dealkalizers • Reactors • Deaerators Continuous Blowoff Systems • Condensate Return Systems • Specialties

FOR SALE

2—Size 24 Blaw-Knox Pulpwood Grapples—like new—excellent condition. Being offered at far below present cost.

1—Jones #31 Repulper complete with reduction gear and 60 H.P. motor.

2—Crane Scales, 22,000 pounds capacity, Fairbanks-Morse, excellent condition.

2—Black-Clawson wet lap machines, one 72″ and one 96″. Completely reworked and like new.

Address inquiries to: Purchasing Department, The Champion Paper and Fibre Company, P.O. Box 872, Pasadena, Texas.

$5,000 to $25,000

SALES—PRODUCTION—TECHNICAL

Competent men badly needed at every level by top mills, converters and jobbers throughout the country. I am a paper man myself. If you have experience in any phase of the Paper Industry and feel qualified to take a step forward in your career, I can and will help you achieve your goal.

Contact me in absolute confidence.

GEORGE M. SUNDAY

Paper Personnel Consultant
Suite 614
220 S. State WA 2-4800 Chicago, Ill.

WANTED—
GENERAL SUPERINTENDENT

Man thoroughly familiar with the operation of modern high speed fourdrinier machines in the manufacture of paperboard. Technical background desirable, but only in combination with actual papermaking experience. Mill located in midwest as part of integrated paperboard, container and carton operation. Address resume including age, education, and experience to Box 261, PULP & PAPER, 370 Lexington Ave., New York 17, N. Y.

WANTED—PLANT ENGINEER

To work for medium sized company located in Northern New England. Engineering background essential, preferably mechanical. Must have ability to create, develop, engineer and supervise construction of wood utilization processes and installations, in addition to usual plant engineering responsibilities. Would work direct with President of Company and will have title of Technical Assistant to President. Should have experience in woodworking, lumber, paper or related forest industries. Attractive salary. Send resume, giving background to Box 262, PULP & PAPER, 370 Lexington Ave., New York 17, N. Y.

CONFIDENTIAL EMPLOYMENT SERVICE

We will welcome an opportunity to be of service, if you are available for a position in paper or pulp manufacturing or paper converting. SEND US YOUR RESUME. Many attractive positions at excellent salaries are open for top-notch men. No fee to be paid unless you accept employment through us. Negotiations are confidential.

Charles P. Raymond Service, Inc.
Phone: LIberty 2-6547
294 Washington St. Boston 8, Mass.

IDEAS INTO CASH

If you have an idea on a chemical product for the paper industry or outlet for existing products we will work with you on such development or duplication Confidential. Write Box 263, PULP & PAPER 370 Lexington Ave., New York 17, N. Y.

PULP-PAPER SALES EXECUTIVE

Pulp-paper sales executive; wide export-import experience; now earning over $30,000 per annum. Seeks association with integrated producer. Salary secondary. Can move East, if necessary. Write to Box 260, PULP & PAPER, 370 Lexington Ave., New York 17, N. Y.

GENERAL MANAGER

For 150 ton Midwest Mill to make semi-chemical corrugating board. Should have experience in the entire production including wood procurement. Contact: Roderick O'Donoghue & Company, 420 Lexington Ave., New York 17, N.Y.

SALES-SERVICE MAN WANTED

Established chemical company wants man with good paper mill or boxboard background for technical sales to board mills and corrugated board plants in central south. Good opportunity to expand established territory. Preferred age 25-35. Write Box No. 257, PULP & PAPER, 370 Lexington Ave., New York 17, N. Y.

Positions for Paper Executives

The nation's largest executive placement agency has an exclusive department for the nationwide placement of successful engineers, technical men and salesmen in the paper industry. Immediate openings in all parts of the country for men under 48 earning over $7,000. Write to R. Graebner, Graebner Executive Exchange, 116 S. Michigan, Chicago, Illinois.

WANTED

CHIEF ENGINEER AND DRAFTSMAN

We are urgently in need of experienced chief engineer and chief draftsman for supervising design and layout of our continuous cooking units. Also development work. Contact Kamyr, Inc., Hudson Falls, New York.

SALES ENGINEERS

A well-established machinery company needs additional sales engineers. Expanding products and markets offer excellent opportunities to a progressive, hardworking salesman. Income and benefits above average. Send resume to Box 264, PULP & PAPER, 370 Lexington Ave., New York 17, N. Y.

New Positions with B-C

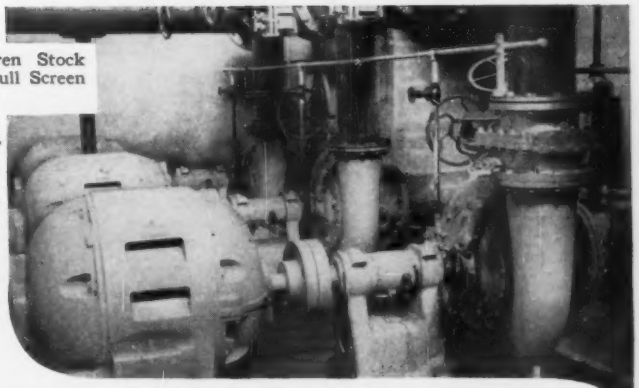
Left to right: EWALD N. PETERSON (left), Works Mgr. for Black-Clawson's Bagley-Sewall division, Watertown, N.Y., who was formerly Works Mgr. for Waterous Ltd., Minneapolis, before that being with Hennepin Paper and a papermaking machinery mfr.

CHARLES S. (CHUB) WHITE (center), on Bagley-Sewall Sales Staff, was formerly Asst. Mgr. and Acting Mgr. at Racquette River Paper Co.

G. E. DALY (right), Shartle Div. of Black-Clawson, travels Midwest as Sales Engineer. Has been a Draughtsman and Engineer with B-C.

40 Years for Supt. Lorenz

TRUMAN W. COLLINS (right), a Director of Crown Zellerbach Corp. and President of Collins Pine Co., presents 40-year service pin to GUS LORENZ (left), Paper Mill Superintendent—Tissue, one of 209 CZ Camas, Wash. employes receiving recognition of 5 to 40 years company affiliation at service pin banquet.



Three Warren Stock Pumps in Bull Screen Room

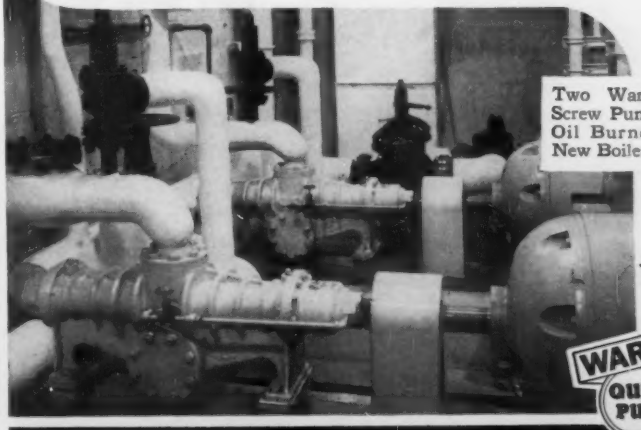
GREAT NORTHERN
a Great Name in Papermaking

and great things are happening in East Millinocket, Maine, where the recently expanded mill of Great Northern Paper Company has a present capacity of 1,000 tons of newsprint per day, making them the largest producers of newsprint in the United States.

Among the many additions in facilities is a Chemi-Groundwood Pulp Mill for processing hardwood, the first large-scale commercial plant of its kind.

Recent Warren Pump installations include Stock Pumps in Bull Screen Room, Pressure Pumps to Grinders, Chemi-Groundwood Decker Stock Pumps, Secondary Screen Accepted Stock Pumps; also Fuel Oil Transfer and Burner Pumps in new Boiler House. Other experience-rated Warren Pumps are serving at Great Northern's Millinocket and Madison mills.

For operating economy and long-range dependability, it is good business to specify: **WARREN PUMPS**



Two Warren-Quimby Screw Pumps on Fuel Oil Burner Service, New Boiler House

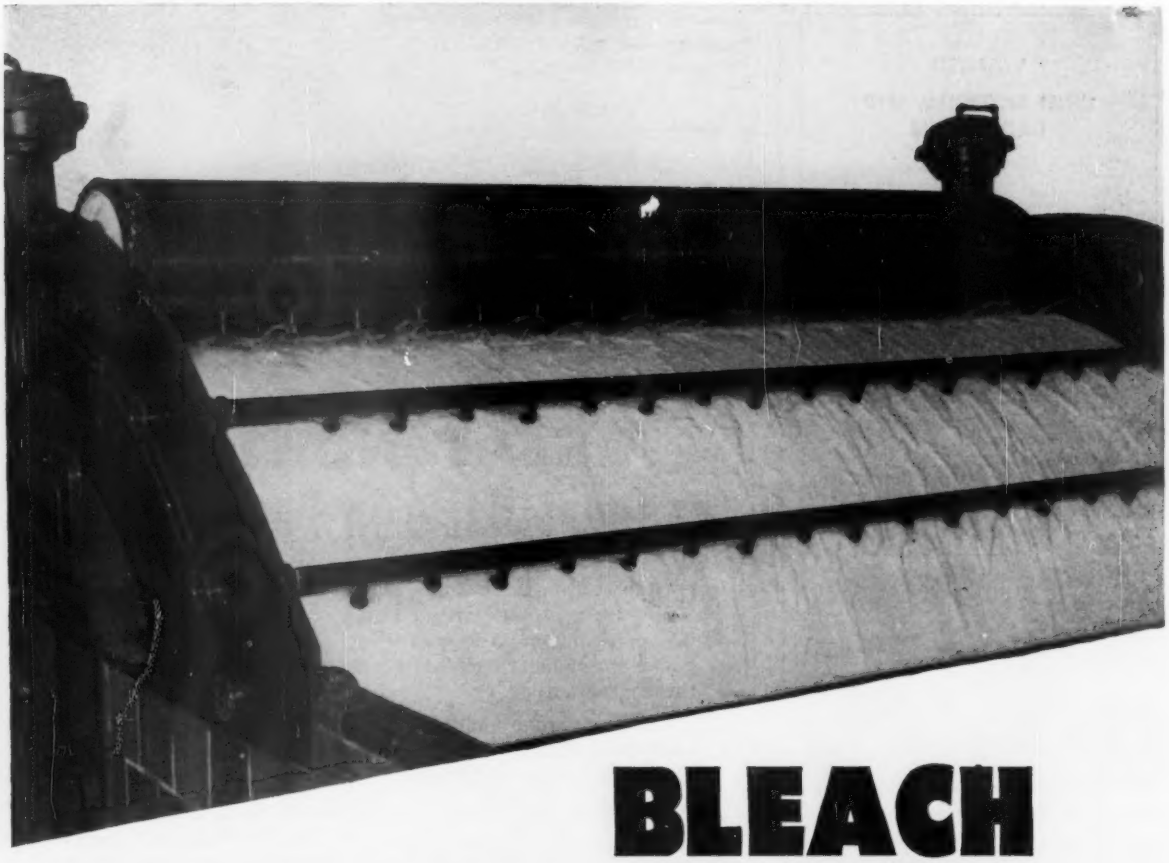
PP-37

WARREN QUIMBY PUMPS

WARREN PUMPS

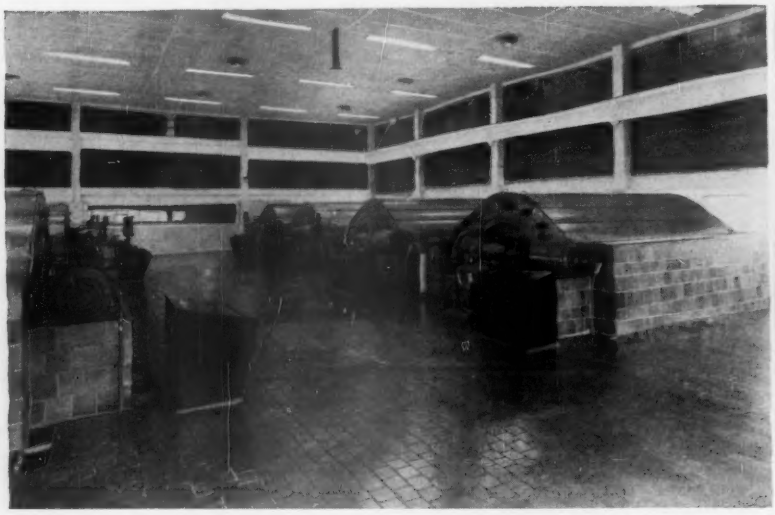
WARREN STEAM PUMP COMPANY, INC.

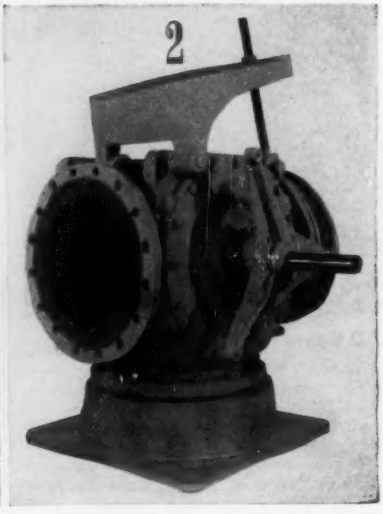
Warren, Massachusetts



IMPCO BLEACH PLANT EQUIPMENT

● Sherbrooke Machineries Limited, Sherbrooke, Quebec Manufactures Similar Equipment in Canada





IMPCO manufactures virtually all types of mechanical bleach plant equipment for new and old plant application. These component parts are readily adaptable for re-vamping existing plants, no matter what the sequence is or is planned to be. We welcome the opportunity to work with you and if necessary tailor the equipment to best satisfy your needs.

We have long recognized the fact that there is no such thing as a standard continuous bleach plant nor are we wedded to any particular sequence flow with corresponding arrangement of equipment. We will continue to develop equipment best suited to do your job.

1 **Bleach Washers**—Impco Vacuum Washers give highest washing efficiencies at low fresh water consumption. Every Impco Washer is "Tailored-for-the-job." Made in 3' - 5' - 8' - 9'6" and 11'6" diameter sizes up to through 20' lengths, in any material of construction.

2 **Line Mixers**—This low-density wabble plate chemical and chlorine Saver-Mixer provides a rapid mixing result which improves retention uniformity with a big savings in chemicals.

3 **Single Shaft Mixers**—This single shaft mixer built of solid hastelloy was developed for mixing liquid ClO_2 with hi-density pulp. Its single hasteiloy rotor contained in a specially designed case delivers uniformly mixed pulp and chemical at the critical moment of reaction.

4 **Scraper-Screw Dischargers**—The unit pictured here is used in continuous down-flow type high density bleachers. Developed over twenty-five years ago, this mechanism offers the most positive and fool proof method of high density stock removal.

5 **Thick Stock Pump**—This positive displacement double rotor pump in solid type #316 stainless construction easily handles stock consistencies from 10% A.D. to 17% A. D. Built in two sizes, the series 300 will handle 350 T.P.D. and the series 500 will do 600 T. P. D. plus. This unit is used in virtually every ClO_2 bleach plant today and has a definite application in high density storage work.

6 **Pulp Circulators**—Built in three sizes in a combination of any acceptable materials for bleach plant work, this specially designed propellor circulator eliminates radial projection and puts the horizontal propulsion factors to work—Result?—A down flow high density bleacher that delivers uniformly, making short circuiting ancient history.

7 **Double Shaft Mixers**—These work horses of the bleach plant, rugged in design and thorough in their job of surrounding the individual fibre with chemical, continuously and intimately mix the chemical, steam and pulp through special internal features. Repeated field tests indicate thorough mixing in pieces of pulp as small as 25 milligrams in particle size.

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MACHINERY INC.
NASHUA, NEW HAMPSHIRE

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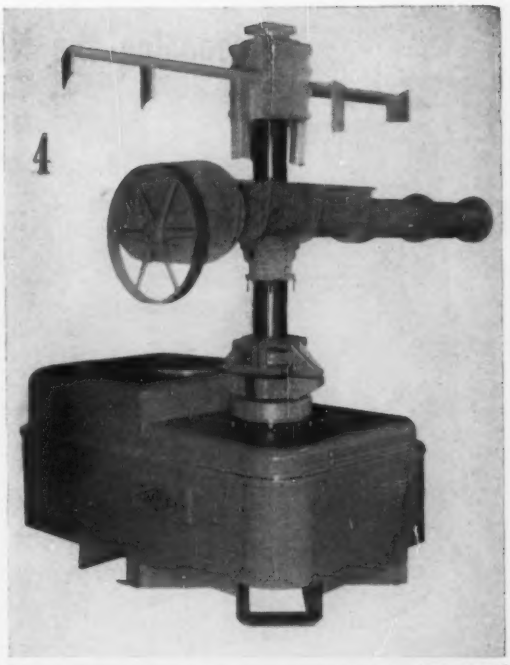

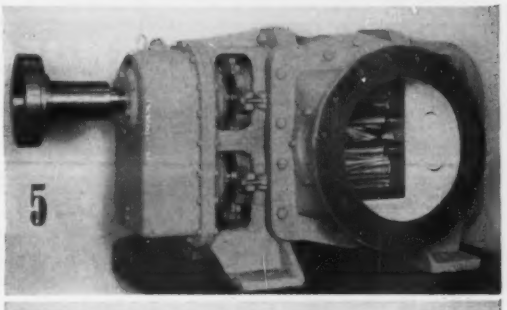

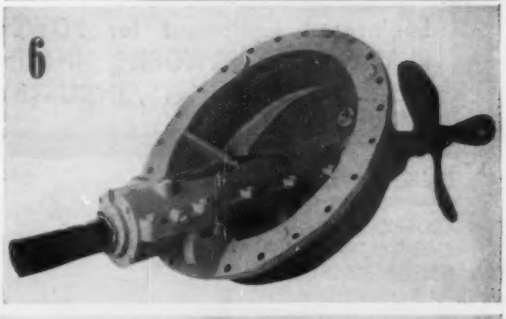

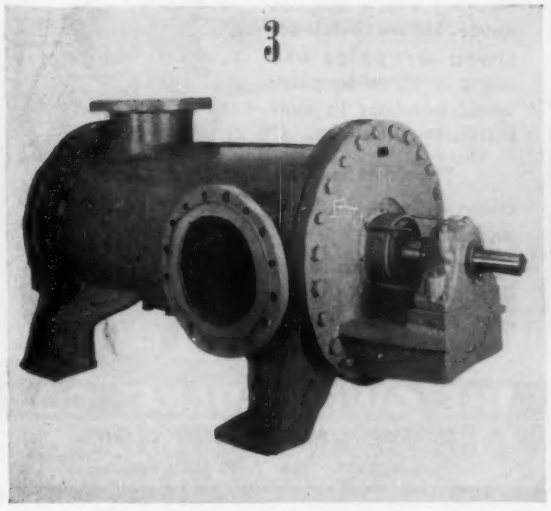

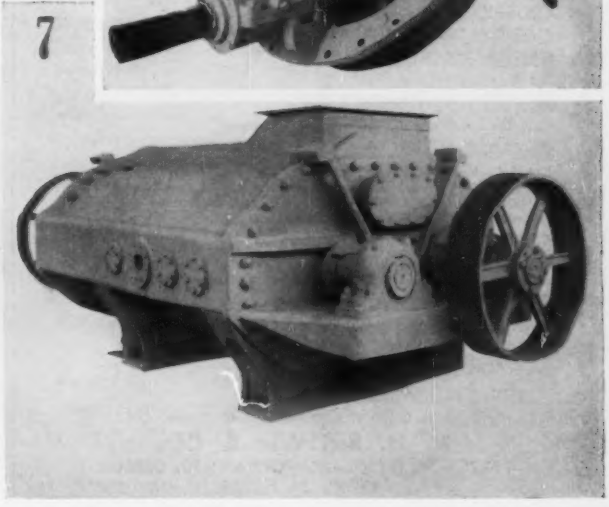

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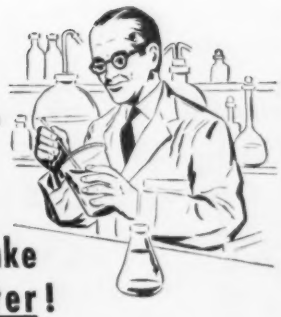

We're working constantly to make good Felts better!

In our laboratory we have experimented with each new synthetic fibre as it has become available. We've blended these fibres with wool in various combinations to produce felts that have greater strength and longer life without sacrificing quality. And we've developed exclusive new chemical formulas that provide permanent proof against bacterial damage to synthetic and wool fibres.

In our mill the most modern spinning, weaving and drying equipment provides ample capacity for producing felts for the largest high-speed machines projected by machine builders. Here, too, skilled craftsmen control every operation, from raw wool processing to finished felt!

...and in the field our experienced sales engineers work closely with paper-makers, advising them of our new improvements and techniques . . . helping them select the proper felt for their particular application. Oriskany produces *only* paper-maker's felts. Our efforts are concentrated on making better felts . . . to help you make your paper products better . . . faster . . . at less cost!

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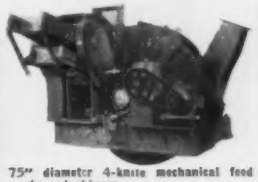
Free upon request!

..this complete story on ....

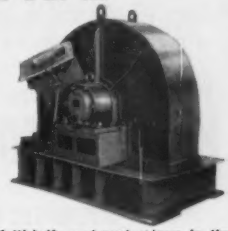
MURCO CHIPPERS

Here is a booklet you should have in your files . . . *the most complete and detailed story on pulpwood* and wastewood chippers . . . complete specifications of each . . . the sizes in which they are available . . . the uses for each model. We will gladly send you a copy upon request. Write for it today.



75" diameter 4-knife mechanical feed wastewood chipper.

Pulpwood chipper made in sizes from 36" to 150" disc.



Multi-knife wastewood chipper in three sizes, 56", 64", 72" diameter discs.

Illustrated are three MURCO Chippers selected from the complete line described and illustrated in the new MURCO Chipper booklet. The reason for the wide preference for MURCO Chippers by paper mills throughout the country is their outstanding performance, producing more and better chips at less cost, with less sawdust and slivers, free from repairs, while at the same time having production records of 100 cords or over per hour.

D. J. MURRAY MANUFACTURING CO.

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"This trademark did not make Beveridge famous but the uniform excellence of Beveridge papers has made this trademark famous."

To manufacture paper of uniform excellence requires the use of uniformly excellent felts — There are no finer felts than . . . .

MIAMI WOOLEN MILLS

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Hamilton Felts

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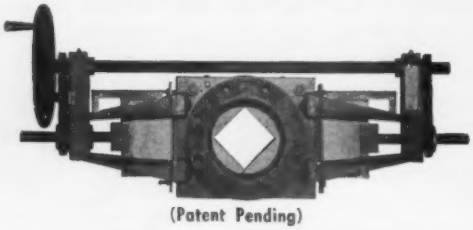
FOR ACCURATE CONTROL



(Patent Pending)

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STOCK VALVES

A new idea in stock flow control, for critical applications. Non-plugging, even with openings less than 1". Available in all materials. Hand-wheel, or motor-operated for remote control.

Write for Bulletin **John B. Chandler**

HANK D. JONES COMPANY

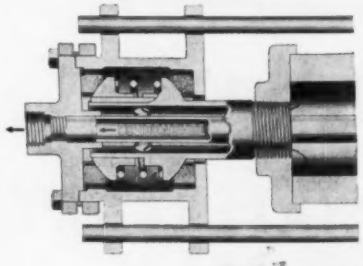
P. O. Box 1748

ATLANTIC BEACH, FLORIDA

JOHNSON JOINT

ROD-SUPPORTED TYPE

The Type LJ Johnson Joint has lugs cast right on the body to accommodate supporting rods. This design lifts the weight of the body from the rotating assembly—permits it to "float" freely inside. Joint shown at left is for syphon pipe service, has steam inlet in side of body 90° from lugs. Type LJ is also available for thru flow service.



Write for complete information. Johnson Joints are also furnished in pipe-supported and self-supported types.

The Johnson Corporation

849 Wood St., Three Rivers, Mich.

ALFRED M. HARTLEY, JR., is new Tech. Sales Mgr. of Paper Chemicals Div., Nopco Chemical Co., announces Vice Pres. Walter B. Morehouse. Mr. Hartley started at Nopco 20 years ago.

Big Safety Celebration Planned on West Coast

Joint Labor-Management Safety association of 37 pulp and paper mills and operating divisions is fully confident that it is going to be able to celebrate another lowered accident frequency rate record for 1955.

So—a 10th Anniversary Joint Conference, drawing over 500 top executives, labor leaders and guests from all three Pacific Coast states, is scheduled to be held at the Olympic Hotel, Seattle, March 7-9. Beginning in 1945, when the West Coast mills pioneered this unique cooperative safety program in industry, each state held separate annual meetings.

In 1954 the frequency rate for the Coast mills was pushed down to a record low 6.31 disabling injuries per million man-hrs. It is predicted this record will be beaten in 1955—the 10th successive time the Coast mills set a new record.

Dryer Explosion at Clayville

Explosion of a dryer of No. 4 machine, one of the three Fourdrinier machines at Doeskin Products, Inc., Clayville, N. Y., caused deaths of four workers who were changing a doctor blade at the dry end. The machine was wrecked, an adjoining machine was knocked out of operation, and the roof was blown off the machine room. Repairs will take several months. The cause was undetermined, excessive steam or paper dust in air being mentioned as possible causes.

A Nostalgic Volume— Hooker Co. History

"Salt & Water, Power & People" is an intriguingly nostalgic, liberally illustrated 109 page history of Hooker Electrochemical Co., in an attractively bound volume. Robert E. Thomas, of Hooker, spent many months writing the history, and getting together the interesting old and new photographs and illustrations. The plants at Niagara Falls, N. Y., Tacoma, Wash., and Montague, Mich., are given considerable attention.

Names Smith Sales Mgr.

JAMES E. SMITH (left), is new Sales Mgr. of Paper Machine Felt Div., Albany Felt Co., Albany, N. Y., according to Lewis R. Parker, Pres. RAY R. DUSTRUDE (middle) is named Field Sales Mgr. and MARCUS T. REYNOLDS (right), Asst. Sales Mgr., both positions coming under direction of Mr. Smith. Mr. Smith continues to report directly to Wayne G. Davis, Vice Pres. in charge of Sales. Mr. Smith joined Albany in 1945, previously having spent 8 years as Industrial Engineer with Bird & Son, Inc. A graduate of Boston U., he is a Lt. Cmdr. in U. S. Naval Reserve. Mr. Dustrude has been with Albany since 1945. He attended St. Olaf College and U. of Minnesota. Mr. Reynolds joined Albany in 1950, after graduating from St. Paul's School and Williams College. He has been Sales Engineer in Mid-Western states.

Ships First Product

Less than five months after arrival of the first machinery at Lockport Felt Co.'s new mill at Starkville, Miss., the first finished Tenax felt left the plant for Southern Paperboard Co., Port Wentworth, Ga.

GEIGY TECHNICAL SERVICE ON COLOR PROBLEMS HAS BEEN OUTSTANDING . . . TRY IT

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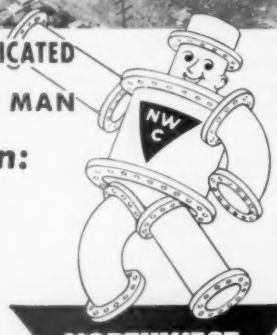

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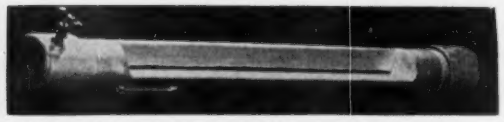
KRAFT CONTAINER BOARD

BLEACHED SULPHATE
BLEACHED KRAFT PAPERBOARD

IMPROVE PAPER *QUALITY!*



with DRIPLESS STEAM SHOWER PIPE
U.S. Patent 2642314—Canada Pat. 1955—other Pat. Pdg.
J. H. Dupasquier, Inventor

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- Improves finish when used on calenders
- Softens Towelling, breaks up bubbles on wire, etc.

ALL PIPE MADE TO ORDER UP TO 3" x 275"
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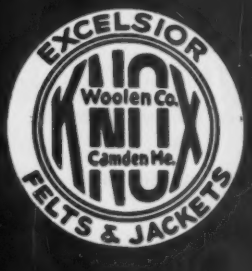

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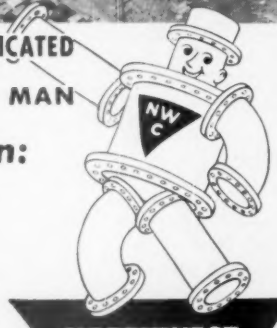

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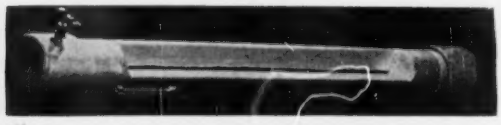

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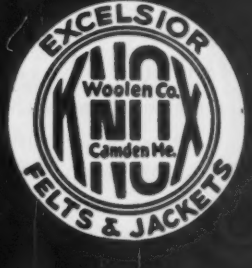

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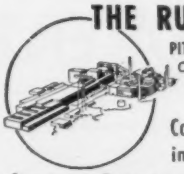

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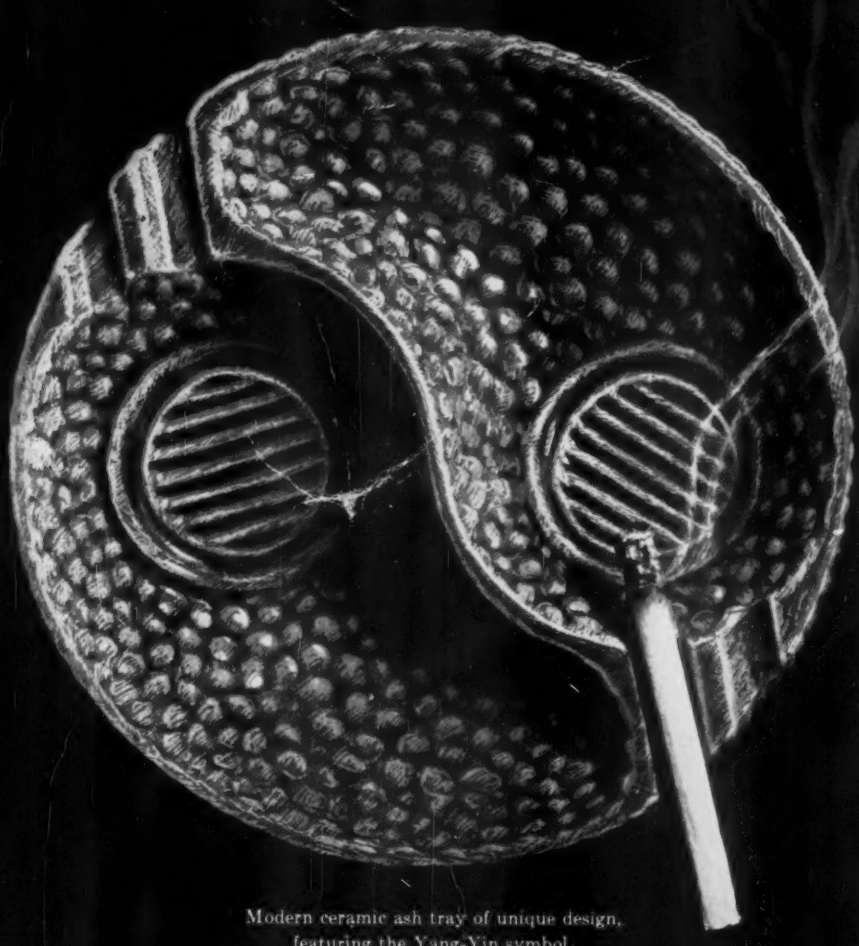

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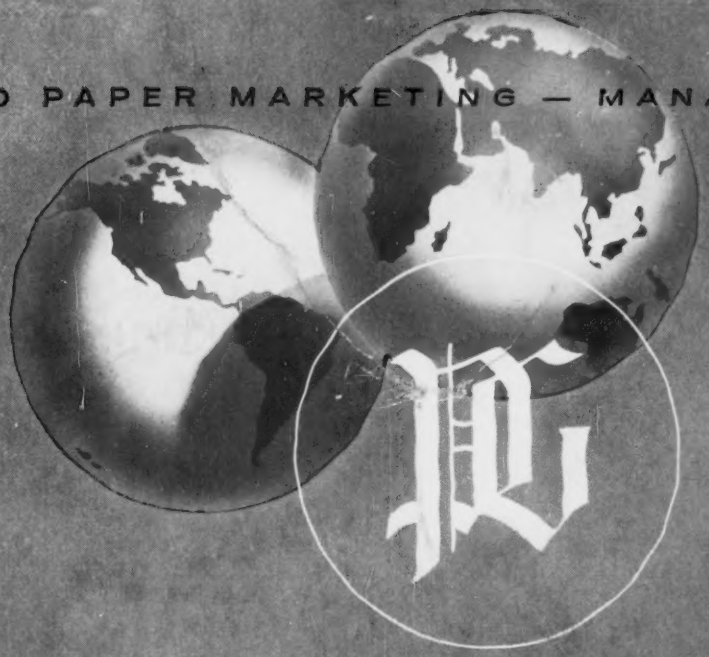

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